

The Refrigeration & Air-conditioning Business

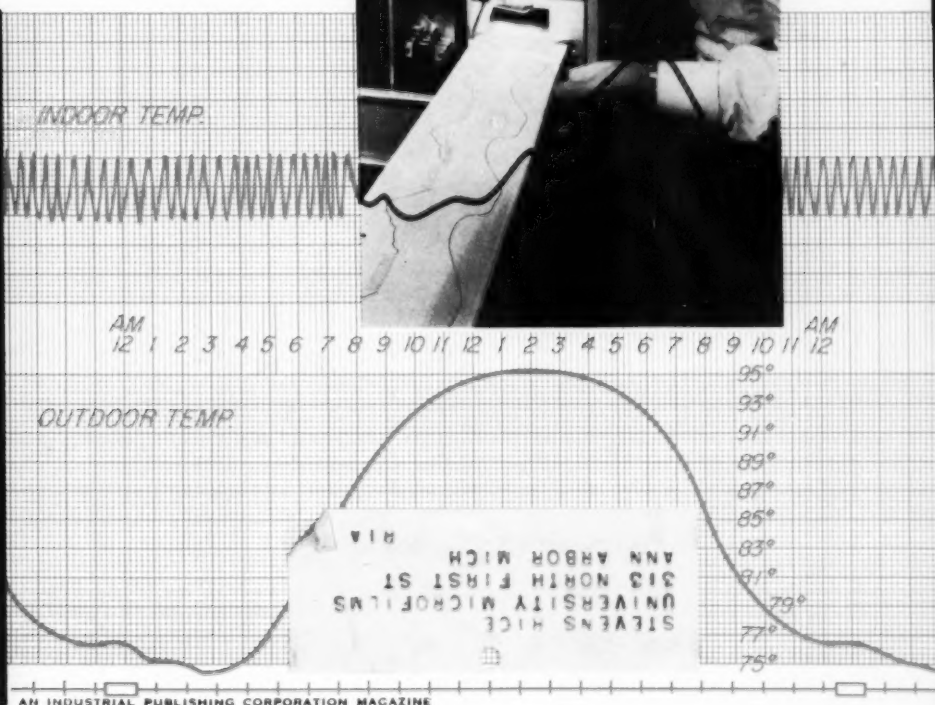
FEBRUARY 1959

THIS IS

WARAC



*.... will it
eliminate
Btu's, tons,
horsepower
in cooling load
calculations?*



AN INDUSTRIAL PUBLISHING CORPORATION MAGAZINE

THE MAGAZINE OF Merchandising • Application • Installation • Maintenance • Business Management



THESE COILS ARE ALL THE SAME!



These coils of Viking thin-wall copper tube may differ in length and dimension . . . but they are identical in that they have all been *tailored to customer requirements!*

Viking today employs the most advanced drawing and handling equipment known to the industry to deliver continuous coils of precision drawn thin-wall copper tube . . . in any desired length up to 2000 feet . . . in a wide variety of coil designs to meet individual specifications: reel-type, helical, layer or bunch.

By developing new coil techniques, originally for the instrumentation field, Viking has won the preference of more and more of America's leading manufacturers of refrigeration and air conditioning units and coils.

VIKING
COPPER TUBE CO.
CLEVELAND 10, OHIO
PRECISION DRAWN SEAMLESS COPPER TUBE

Circle No. 1 on Reader Service Card



SPECIFY • INSTALL

ALCO

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• THERMO EXPANSION VALVES

REFRIGERANT
FREON-12
FROM 1/2 TON TO 50 TONS
REFRIGERANT

FREON-22
FROM 1 TON TO 80 TONS

CARRENE-7
FROM 3/4 TON TO 60 TONS

PROPANE
FROM 1 TON TO 88 TONS

to change
capacity...
or to clean

Super charges for any
application.
Available with external
or internal superheat
adjustment and external
or internal equalizer.
Widest variety of body
styles and connections.

*Simply... loosen screws
lift out cage...
you never break connections*

2 body designs meet every requirement...

STRAIGHT-THROUGH CONNECTIONS or RIGHT ANGLE CONNECTIONS



Call your Alco wholesaler.
Write for Specifications Bulletin No. 171-56.

- BUY SECURITY
- BUY QUALITY
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7802

ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors
Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

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\$20,000⁰⁰ IN PRIZES

FREON® "PARTNERS IN PROFIT" CONTEST

1ST PRIZE

CHEVROLET STATION WAGON!



1959 Kingswood
with air conditioning, air
suspension, power steering,
radio, heater, automatic
transmission . . .

fully equipped . . . \$4,000



Hints to help you win

Your complete air conditioning and refrigeration wholesaler is your partner in profit. It will pay you to know and use his services, cultivate his friendship. Here are some of the benefits you get by dealing through your wholesaler.

- **Convenience** of buying at a one-stop supply source. Your wholesaler keeps ample, diversified stocks of high-quality air conditioning and refrigeration parts, equipment and supplies.
- **Immediate delivery** by your wholesaler permits you to give prompt, dependable service—impressive in emergencies.
- **Cost savings** because your wholesaler assumes expenses of inventory, warehousing, shipping, accounting and insurance.
- **Expert technical and engineering help** when you want it. Your wholesaler assists with design problems, figuring material costs, gives catalog service, prices and up-to-date information on new products.

"Freon" Check List

Look for this list of premium qualities of "Freon" refrigerants on your official entry blank. Check the one you consider most important.

- ☐ Time-tested—over 27 years in use—you can't go wrong with "Freon."
- ☐ Stable, pure and dry.
- ☐ Factory-sealed for purity.
- ☐ Nontoxic, nonflammable.
- ☐ Always available—anywhere in the world.
- ☐ Made by Du Pont—backed by years of technical and manufacturing leadership.

Insist on genuine "FREON"—Premium Quality Refrigerants . . . in the cylinders with the gold-head caps.



"FREON" PRODUCTS DIVISION
E. I. du Pont de Nemours & Co. (Inc.)
WILMINGTON 98, DELAWARE

Better Things for Better Living
... through Chemistry

"Freon" and combinations of Freon and F-11 and F-12 are trademarks of E. I. du Pont de Nemours & Co. (Inc.) registered trademarks for its fluorinated hydrocarbon refrigerants.

3-2ND PRIZES



**\$1,000
UNITED STATES
SAVINGS BONDS**

5-3RD PRIZES



**RCA VICTOR
"MARK 21" COLOR TV**
worth \$495 each

25-4TH PRIZES



**POLAROID
"HIGHLANDER"
CAMERAS**
worth \$72.75 each

250-5TH PRIZES



**WESTINGHOUSE
TRANSISTOR
PORTABLE RADIOS**
worth \$39.95 each

-284 CHANCES TO WIN!

CONTRACTORS, SERVICE MEN . . . You are eligible to win an air-conditioned 1959 Chevrolet station wagon if your company has bought Freon® refrigerants from a complete air conditioning and refrigeration wholesaler within the contest period (January 26, 1959—May 15, 1959). Read over the simple rules and hints to help you win. Then just tell us why you think it's good business to deal with a complete air conditioning and refrigeration wholesaler. It's easy! Enter often! You can get official entry blanks through your wholesaler. Ask him about the Freon® "Partners in Profit" Contest today.

SIMPLE CONTEST RULES:

1. Contest is open to all firms and their employees who are customers of complete air conditioning and refrigeration wholesalers providing that the customer firm purchases "Freon" refrigerants from a complete air conditioning and refrigeration wholesaler during the contest period (January 26, 1959 to May 15, 1959). Employees of E. I. du Pont de Nemours & Co., its subsidiaries, its agencies or its wholesale distributors of "Freon" refrigerants are not eligible to enter the contest.

2. Check the quality of "Freon" most important to you.

3. Complete this statement in 35 additional words or less: "I believe it is good business to deal through a complete air conditioning and refrigeration wholesaler because . . ."

Mail your entry to: **FREON® CONTEST, Box 23F**
Mount Vernon 10, New York

Entries must be postmarked by May 15, 1959, and received by us at least within eight days of this date.

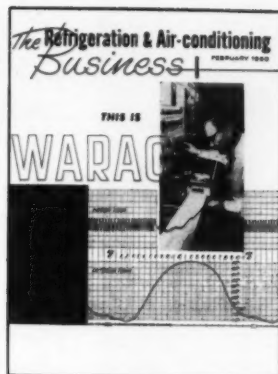
4. You may enter as often as you like. Your entry must be your own original work and must be submitted in your own name, on an official entry blank, obtainable through your complete air conditioning and refrigeration wholesaler.

5. Prizes awarded by Reuben H. Donnelley Corp., on the basis of their judgment regarding originality, sincerity and aptness of thought. Duplicate prizes awarded in case of tie.

6. Judges' decisions are final. All entries and ideas become the property of E. I. du Pont de Nemours & Co. (Inc.). Name will be returned. Contest is subject to federal, state, and local regulations.

7. Winners will be notified about six weeks after close of contest.

Circle No. 4 on Reader Service Card



COVER: Here's a dramatic new approach to the old problem of calculating residential cooling loads. This electronic computer does the job quicker, easier, and more accurately. What's more, it expresses the result in terms the customer can understand.

FEATURES

- 39 **INSURANCE AND THE WARRANTY PROBLEM**
Here's a provocative proposal that sounds like it would make sense for all
- 40 **THIS IS WARAC**
Will it eliminate Btu's, tons, and horsepower in cooling load calculations?
- 45 **JOB-PLANNED TRUCKS SAVE TIME AND MONEY**
... for this contractor, so he's converting his fleet to one-load vehicles
- 46 **DON'T SELL HALF A JOB**
... just because the customer asks for it. You might convince him he's wrong!
- 48 **WINTER WORK ORDERS**
... help keep this contractor's servicemen busy the year around
- 49 **WHAT ABOUT APTITUDE TESTS?**
They won't solve all your sales hiring problems, but they can be a big help
- 51 **ALL-WEATHER CONDITIONING FOR ELECTRONIC TRAILERS**
The Navy ordered it, and a Washington, D.C. contractor filled the bill
- 52 **AIR-CONDITIONING DOES MORE THAN COOL**
That's the point this distributor drives home in a hard-hitting direct mail series
- 53 **MORE SALES, LESS STALES**
... is the answer to any baker's prayer. A walk-in freezer makes it possible
- 54 **THESE COLD STORAGE WALLS WERE BUILT ON THE GROUND**
This novel horizontal method of fabrication cut both erection time and costs
- 57 **DESIGN COOLERS AND FREEZERS FOR HEAVY PRODUCT LOADS**
If you don't, you run the risk of equipment failure and customer dissatisfaction



DEPARTMENTS

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• Accepted as Controlled Circulation Publication at St. Joseph, Michigan. Postmaster: Send form 3579 to Room 800, 812 Huron Road, Cleveland 15, Ohio.



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DRY ACID CLEANERS
 based on Du Pont Sulfamic Acid

New cleaning compounds made with sulfamic acid are sold and handled *dry*—no hazardous liquids to ship or store. Dry or dissolved in water for use, they create no fumes. Yet these cleaners have all the penetrating power of hydrochloric acid with far less corrosive effect.

Sulfamic acid-based cleaners remove scale and deposits from air-conditioning and ice-making equipment, food-processing vessels, steam boilers, milk evaporators and pasteurizers, marine evaporators and heat exchangers. Cleaning action is fast, thorough.

We'll gladly send you more information on sulfamic acid-based cleaners and the names of formulators who offer these new compounds. Just mail the coupon below.



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 through Chemistry

Du Pont
SULFAMIC ACID



E. I. du Pont de Nemours & Co. (Inc.)
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 Wilmington 98, Delaware

Please send me: ☐ sulfamic acid general equipment-cleaning bulletin; ☐ names of formulators offering cleaners based on sulfamic acid.

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 Company _____
 Address _____
 City _____ Zone _____ State _____

Circle No. 5 Reader Service Card

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■ published monthly by

The Industrial Publishing Corporation
 812 Huron Road Cleveland 15, Ohio

IRVING B. HEXTER *President*
 LESTER P. AURBACH *Exec. Vice President*
 EDWIN M. JOSEPH *Vice President*
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Subscription Rates: United States and possessions \$7.00 per year, \$12.00 for 2 years; Canada—\$8.00 per year; Foreign—\$10.00 per year, except the United Kingdom. United Kingdom subscriptions £3.5.0 per year, payable in sterling to our London Office. Single copy price in U.S. .75 cents. All subscriptions subject to individual acceptance by the publisher.

Printed in U.S.A.

The Industrial Publishing Corporation
 also publishes:

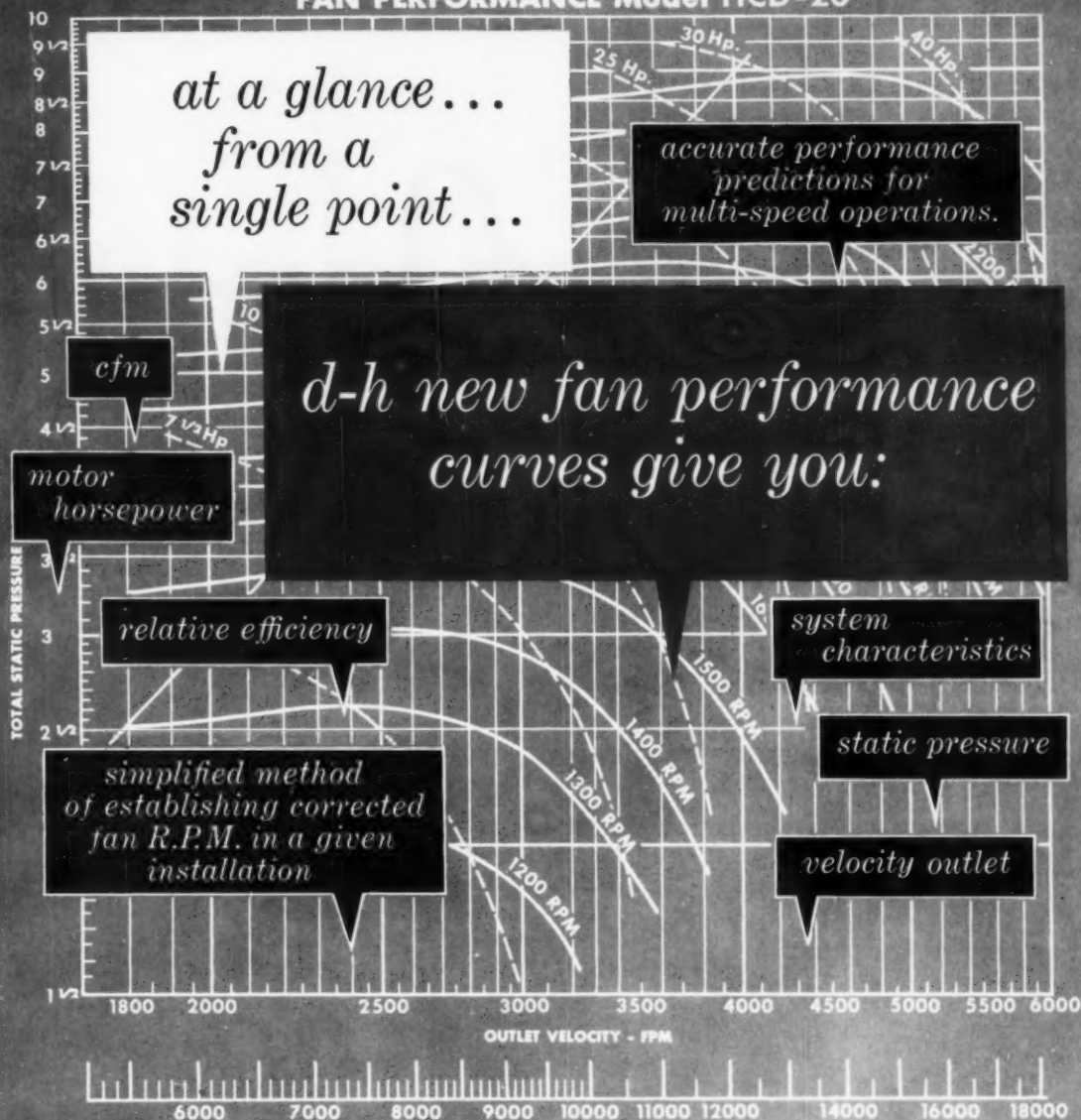
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FAN PERFORMANCE Model HCD-20

*at a glance...
from a
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*accurate performance
predictions for
multi-speed operations.*

*d-h new fan performance
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**on horizontal & vertical
air handling units... from 0" to 8" static pressure**

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PLEASE SEND CHARTS-XXX**

NAME _____

FIRM NAME _____

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CITY _____

STATE _____

**These 2 thermostats
give you a choice of**

54 Control

**Handsome, versatile Honeywell T87 and
T870 thermostats let you meet the
needs of any air conditioning system**

NOW YOU can standardize on Honeywell and let *one* company be responsible for *all* your air conditioning control needs.

Honeywell offers you: Thermostat and sub-base matched for the job; semi-automatic or automatic changeover; heating and cooling—single- or two-stage.

And when you deal with Honeywell, you take advantage of the best field service in the industry, backed by 112 local Honeywell offices located in every part of the country.

For full details on Honeywell's complete line of Residential Air Conditioning Controls, call your local Honeywell office, or write: Minneapolis-Honeywell, Dept. RS-2-26, Minneapolis 8, Minnesota.

Honeywell



First in Control

Circle No. 7 on Reader Service Card

THE BUSINESS

Combinations!



42 CONTROL COMBINATIONS—T870 THERMOSTAT

New deluxe heating-cooling series permits semi-automatic or full-automatic changeover. Six models, seven sub-bases give up to 42 combinations for every type of heating and cooling—single- or two-stage. Switching for remote reset available. Anticipation on all stages of heating and cooling. Easy installation. Dust-free mercury switches. Handsome styling.



12 CONTROL COMBINATIONS—T87 THERMOSTAT

Standard Residential Air Conditioning thermostat for semi-automatic changeover. 12 matching Q405 sub-bases provide the most flexible control combination available. Features the popular styling, decorator cover, and engineering advantages of the world-famous Honeywell Round. Dust-free mercury switch. Anticipation on both heating and cooling.

YOU HAVE MORE TO SELL WHEN YOU SELL HONEYWELL

Only Halstead & Mitchell offers a cooling tower with a 20-YEAR GUARANTEE

ON THE WETTED DECK
AGAINST FAILURE
DUE TO ROTTING
OR FUNGUS ATTACK



Here's why this is important: Fungus growth on cooling tower wood fill very often can accumulate to the extent that it actually obstructs air flow through the tower. This reduces tower capacity and affects performance of the refrigeration or air conditioning equipment involved. In severe cases, the wood will rot and cause tower failure.

Treated Deckings—For positive protection against such harmful effects, Halstead & Mitchell subjects the wood deck material used in all H&M cooling towers to a special, pressure creosote treatment. That's why *only* Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or attack by fungus. Original tower capacity is maintained, and that reliability is what cooling tower purchasers need.

Anti-Corrosion, Plastic Coatings—Halstead & Mitchell Cooling Towers have many other design features that increase tower life and keep maintenance costs to a minimum. For instance, the cooling tower casings are completely protected against corrosion by separate plastic coatings of Vinsynite, Vinyl Zinc Chromate, and chlorinated rubber, *after assembly*. Every edge, every corner, is sealed against rust.

Permanently Sealed Bearings—Another example, fan bearings are permanently lubricated and sealed. Damaging moisture is kept out. Maintenance and periodic greasing are eliminated.

H&M Cooling Towers are available in capacities of 2 thru 125 tons. Types include propeller fan, centrifugal fan and take-apart models. See your local wholesaler, or write for more information. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



COOLING TOWERS • WATER-COOLED CONDENSERS
AIR-COOLED CONDENSERS • FINNED COILS

Circle No. 8 on Reader Service Card

THE BUSINESS



Don't omit
the essential
ingredient
in selling...

**COMPLETE YOUR PROPOSAL
WITH FINANCING ON THE**

COMMERCIAL CREDIT PLAN

Most prospects need their cash reserves and usual lines of credit for current operation. Make it easier for them to sign on the dotted line by including financing arrangements. **COMMERCIAL CREDIT's** Refrigeration Plan has become an essential part of the proposal of so many refrigeration and air conditioning companies.

COMMERCIAL CREDIT's Refrigeration Plan is tested by time and experience in handling the financing for thousands of commercial installations. Let us show you how **COMMERCIAL CREDIT's** experience and know-how can save you time and money . . . and help you close sales with less delay. Call the nearest **COMMERCIAL CREDIT** office or write **COMMERCIAL CREDIT CORPORATION**, 300 St. Paul Place, Baltimore 2, Md.



ANOTHER SERVICE OFFERED BY AFFILIATES OF COMMERCIAL CREDIT CORPORATION



Schweich

Edward F. Schweich has been named executive vice president of Lewin-Mathes Co., Div. of Cerro de Pasco Corp. Schweich formerly was secretary. Six other changes have been made by the company. **Bram J. Lewin** takes over as vice president in charge of production. **Harold E. Lewin** has been named vice president in charge of metal purchasing. **Rodrick J. Lewin** has been appointed vice president in charge of sales. **James M. Dreyer** has been named secretary. New general sales manager is **Jerome J. Marx**. **Henry Stucke** has been named to assist Marx.

Appointments of new factory branch managers for Chrysler Corp.'s Airtemp Div. have been announced. They are: **Lawrence H. Baker**, New York; **Charles M. Barr**, New Orleans; and **Robert L. Williams**, Houston. Baker joined Chrysler in 1952. Formerly manager of the Houston branch, Barr joined the division in 1953 as a district manager in Dallas. Williams most recently was in charge of branch operations in Houston for O. A. Sutton Co.



Schoepflin

Niagara Blower Co. has announced that **Paul H. Schoepflin** has been elected to the newly created post of chairman of the board of directors. **Martin H. Olstad** succeeds Schoepflin as president. Schoepflin is a founder of the company and has been its president since 1919. Olstad joined Niagara in 1929 and became vice president in 1955.

George I. Kalish, New York district sales manager for York Corp., subsidiary of Borg-Warner Corp., has been assigned to the disposal of surplus finished products. Kalish will sell to jobbers, exporters, and others not covered by the company's regularly established sales outlets.

Controls Co. of America has announced four major promotions. **Phil Bain** has been promoted to product line manager, industrial and commercial controls sales. Bain formerly was manager, advertising and market research, appliance and automotive controls. **H. R. Chapin** was named chief product engineer, appliance and automotive controls. Chapin has been with the organization since 1954 and for the past two years was engineering supervisor of the

switch group. **J. J. Kaleba** was appointed engineering supervisor of the switch group. Kaleba has been with the company as a product engineer since 1955. **Marshall Zugehar** was promoted sales coordinator, International Div. activities. In addition, Zugehar will serve as co-ordinator for automotive sales.

Five top changes have been announced by Bohn Aluminum & Brass Corp. **Simon D. Den Uyl**, formerly president, has been elected chairman of the board. **Terry W. Kuhn**, formerly executive vice president, has been elected president. **Richard C. Aylward**, general sales manager, has been named vice president of sales. New vice president is **H. Blake Thomas**, general manager of Betz Div. **Guy H.**

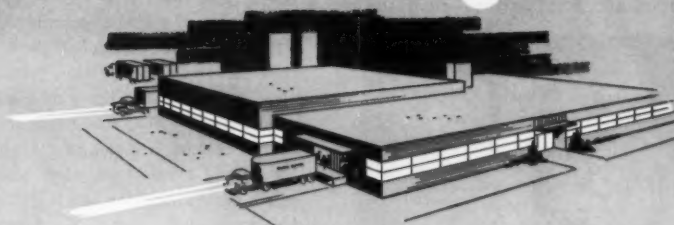


Den Uyl



SEVERAL FIELD SALES changes have been announced by Wolverine Tube, Div. of Calumet & Hecla, Inc. Top row left to right: **Richard B. Flynn**, former east central district sales manager, now sales manager of the Cleveland district; **Carl T. Fuller**, former sales manager of southwestern district, now sales manager of Chicago district; **Edmund J. Campbell**, midwestern district, now sales manager Detroit area; **T. F. Vigmostad**, sales representative of midwestern district, now St. Louis sales manager. Bottom row left to right: **Fred F. Moore** remains sales manager of New York district; **Philip MacKay**, former Philadelphia sales representative, now sales manager of that district; **George W. Overstreet**, sales representative eastern district, now Dallas district sales manager; and **Richard C. Cash**, sales representative southwest district, now sales manager Birmingham area.

a "sleeper" market that
keeps men awake nights...



Crystal Tips[®] manufacturing

facilities are working 24 hours a day
to keep up with accelerated demands
for Crystal Tips ice makers

That's why it surprises us that some very good
refrigeration distributors still hesitate to include
a line of ice makers in the products they sell.

If you're one of those who are skeptical about
the profits that can be made and the big market
that is still barely touched, you haven't investi-
gated what Crystal Tips has to offer! Let us
show you how Crystal Tips distributors are
cashing in on this "sleeper" market. We've got
facts and figures that prove that this is an
awake, alive and big market!

More men are selling Crystal Tips than ever
before, and they're making more money with
Crystal Tips *than with any other ice maker.* If
you want more sales and bigger profits, write,
wire or phone us now, while this ad has your
attention.

First Name in Automatic Ice Makers

Models illustrated read-
ing clockwise from top:
B-300-B, B-300-B, B-1,
B-200-B. Capacities from
45 lbs. up to 1/4 ton
per day.



Crystal Tips

A COMPLETE LINE

Automatic
2-IN-1
ICE MAKERS

American **AUTOMATIC**
ICE MACHINE COMPANY

1972 Park Avenue, N.W., Faribault, Minn. • EDison 4-5501



IT PAYS TO BE A CRYSTAL TIPS DISTRIBUTOR

Pitts, vice president of manufacturing, has been appointed new director of the firm.

F. G. (Ted) Coggin has been promoted to vice president of Detroit Controls Div., American Radiator & Standard Sanitary



Coggin



Miller

Corp. Coggin has been general manager of sales and marketing. **William A. Miller** has joined the division as manager of marketing administration.

Merle G. Haynes has been appointed by Pennsalt Chemicals Corp. as representative for its line of Isotron refrigerants. Haynes' headquarters will be in Berkeley, Calif. His territory includes the states of California, Oregon, Washington, Colorado, New Mexico, Montana, Idaho, Wyoming, and Utah. Previously he was employed by Frigidaire Corp. in California and also was a Kelvinator dealer for four years.

Marlo Coil Co. has announced the appointment of **H. T. Allen** to the staff of Engineering Sales Co., Marlo's representative in Jackson, Miss.

Sporlan Valve Co. announces the appointment of **Robert D. Hutchings** to its



field sales organization. Hutchings will take over Sporlan's Cleveland Office. He has had extensive experience in the sale, design, installation,

and maintenance of large field installations.

Six changes in its Commercial Div. field organization have been announced by Minneapolis-Honeywell Regulator Co. **Hugh Macnair**, who joined Honeywell in 1949 and most recently has been commercial sales manager of the company's Union, N. J., branch office, has been appointed central region commercial sales manager. **Harold Fox**, manager of the Commercial Div. service and installation department at the firm's home office since 1948, has been transferred to Los Angeles to take over the newly created position of Pacific region service and installation manager. **John R. Green**, St. Louis branch service and installation manager since 1955, has been named to the newly created post of service and installation manager of the southeast region. Named New Jersey branch commercial sales manager is **Allan R. Lesslauer**, a Honeywell employee since 1951. **Rudolf Saliwanchik**, service and installation manager in Indianapolis since 1954, will assume similar duties at the St. Louis branch. **Lin L. Grisham**, with the company since 1954, will succeed Saliwanchik as Indianapolis branch service and installation manager.

Arthur A. DaSilva, former operations manager, has been appointed manager of the Long Island sales office for the plumbing and heating division of American-



DaSilva



Sturges

Standard. DaSilva replaces Leon R. Graves, who is retiring after 48 years with the firm. New operations manager is **Ronald T. Sturges**. Sturges joined American-Standard in 1926.

W. J. Aulsebrook, in the refrigeration and air-conditioning

business for 35 years, has retired. For the last two years Aulsebrook has been manager of quality control for Evansville Div. of Bendix-Westinghouse.

Two new district managers have been appointed by Marsh Instrument Co. **Don L. Warner** will direct operations of the Philadelphia



Warner



Storrs

sales office, serving eastern Pennsylvania, New Jersey, District of Columbia, Maryland, and Delaware. As district manager of the Quincy office, **Mansur Storrs** will serve the states of Maine, Vermont, New Hampshire, Connecticut, Rhode Island, and Massachusetts.

Marian Szczepanski has been appointed director of research of Wheel Trueing Tool Co. Szczepanski will be responsible for improving the company's processes, including the development of new products.

Ken Zehnder has been named to represent the Vending Machine Div. of La Crosse Cooler Co. Zehnder's territory includes Ohio, Indiana, and Michigan. He will headquarter in Mansfield, Ohio.

Mitchell P. Kartalia, manager of Square D Co.'s marketing division, has been elected a vice president. Kartalia is responsible for all marketing programs, including distributor relations, field office operations, national

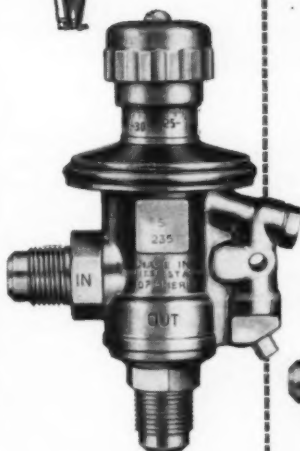
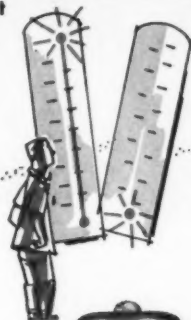


advertising, research, product development liaison, and export activities. Prior to last July he had

Take the pressure off your flow control problems with these A-P regulating valves

PERMITS

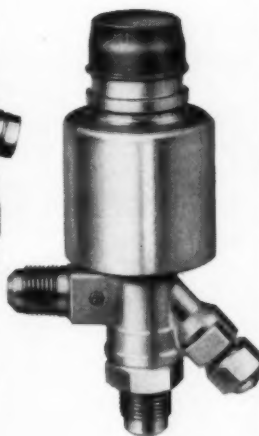
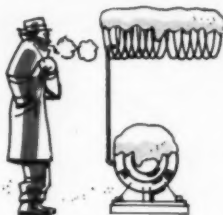
operation of 2 or more evaporators — at different temperatures — with single condensing unit



MODEL 235-S EVAPORATOR PRESSURE REGULATING VALVE — 1/2 ton R-12, visual pressure setting from 0 to 40 lbs. Also available with 20 to 70-lb. adjustment range. Suitable for all refrigerants.

PREVENTS

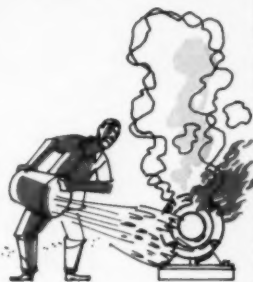
freezing of water cooling equipment and frosting of air coils



MODEL 238 EVAPORATOR PRESSURE REGULATING VALVE — 1 ton R-12. Also available in limited adjustment range of 32 to 38 psig.

PROTECTS

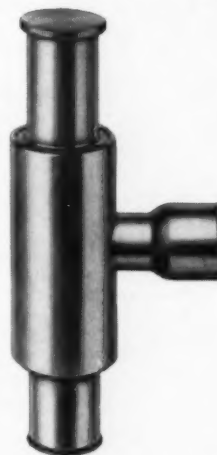
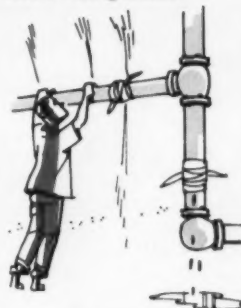
compressor motors from overload and possible burn-out



MODEL 237 CRANKCASE PRESSURE REGULATING VALVE — for hot gas or electric defrost installation. Two capacity ranges: 1 1/2 and 3 tons R-12. Flare or solder connections. Two adjustment ranges: 0 to 40 lb. opening point; 30 to 160 lb. opening point. Valve opens on outlet pressure decrease below opening point.

PERFORMS

pressure regulating function for all non-corrosive refrigerants



MODEL 239 PRESSURE REGULATING VALVE — Model 239A in two adjustment ranges: 40-140 and 80-210 psig, opening point. Model 239BH 40 lb. to 190 lb. opening point adjustment range. Protected with long spud solder connections. Valve opens on inlet pressure increase above opening point.



CONTROLS COMPANY OF AMERICA

Manufacturers of A-P CONTROLS

2486 N. 32ND ST. • MILWAUKEE 10, WISCONSIN
COOKSVILLE, Ontario • NIJMEGEN, Holland
Controls That Make Modern Living Possible

Your flow control worries are over when you rely on A-P pressure regulating valves. Industry favorites like the valves shown and quantity "specials" created for specific purposes cover just about every flow control problem. Put Controls Company of America's expanded creative resources to work for you. Range and experience combine to assure delivery of any quantity to fit any schedule.

been sales manager of the distribution equipment division. He will headquarter in Detroit.

Two new regional managers have been appointed by American Air Filter Co., Inc. **John J. Willis** has been named to the newly created post of midwest regional manager. **A. B. Ullrich Jr.**, has been selected southern regional manager, succeeding **Morris G. Munson**, who retired.

Richard L. Signorelli has been named assistant to the vice president of manufacturing for **Mueller Climatrol**, division of **Worthington Corp.** **William G. Crooker** has been appointed chief engineer for cooling.

Malcolm T. Bard has been appointed vice president of **Rubber-Seal Products Co., Inc.**, manufacturer of waterproof mastics, adhesives, and caulking compounds

for the air-conditioning, automotive, aircraft and marine trades. **Bard** formerly was director of zone operations for **Airtemp Div., Chrysler Corp.**

Four sales engineers have been named by **Acme Industries, Inc.** Covering the Chicago, Ill., area will be **George J. Schulz** and **D. G. Merrill**. **Charles M. Colyer** will



Schulz



Carow

handle South Carolina. **Bob Carow**, owner of **Bob Carow Co.**, **Lubbock, Tex.**, will cover the Texas Panhandle territory.

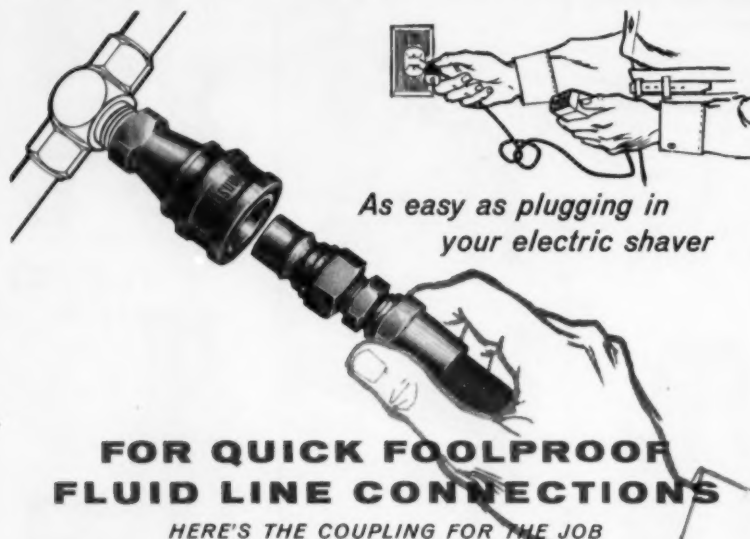
T. J. Ammel has been named sales manager, o.e.m. products, for **York Div., Borg-Warner Corp.** He will headquarter in **York, Pa.**

Gordon V. Bond has been named specialist for **Weathermaster** air-conditioning systems for the **Machinery and Systems Div. of Carrier Corp.** **Bond**, formerly sales manager at the firm's district office in **Houston, Tex.**, replaces **Maurice J. Wilson**, who has moved into a managerial position with **Carrier's Unitary Equipment Div.** Appointed to head operations for large air-conditioning in **Houston** is **Charles W. Kaufman**, sales engineer in the **Dallas** office.



Bond

Research Products Corp. has announced the addition of **Philip Capron** to its sales staff. **Capron** will serve the **Virginia, Maryland, and Washington, D. C.** area, with headquarters in **Washington.**



FOR QUICK FOOLPROOF FLUID LINE CONNECTIONS

HERE'S THE COUPLING FOR THE JOB

To connect a Hansen Two-Way Shut-Off Coupling, you merely pull back the sleeve and push the Plug into the Socket. To disconnect, just pull back the sleeve. No tools required. When Coupling is disconnected, similar valves in Socket and Plug shut off both ends of line - practically eliminate spilling of liquid or escape of gas at instant of disconnection.

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from $\frac{1}{8}$ " to 1" inclusive. Available in brass or steel.



WRITE FOR THE HANSEN CATALOG

Here's an always ready reference when you want information on couplings in a hurry. Lists complete range of sizes and types of Hansen Quick-Connective Couplings. Write for your copy.

HANSEN

SERIES HK®

TWO-WAY SHUT-OFF COUPLING

Instantly shuts off both sides of line... prevents loss of liquid, gas, or pressure.



QUICK-CONNECTIVE FLUID LINE COUPLINGS

FOR COMPRESSED AIR • HYDRAULIC FLUIDS • OIL • GREASE
WATER • VACUUM • STEAM • OXYGEN • ACETYLENE
REFRIGERANTS • GASOLINE • COOLANTS • LP-GAS

REPRESENTATIVES IN PRINCIPAL CITIES

SINCE 1913



QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN

MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 35, OHIO

Circle No. 12 on Reader Service Card

DAVISON

PA-400

Silica Gel

stops corrosion and freeze-up in seconds

Davison PA-400 in refrigerant gases drops moisture level to less than 10 ppm—effectively prevents water from combining with refrigerant to cause hydrochloric and hydrofluoric acid formation. In fact, if acids have already formed, Davison PA-400 will remove them, too.

Scale, sludge and other foreign matter as

small as 1 micron in size are removed by Davison PA-400 full-flow, no by-pass filtration. Combine top dehydration with the finest filtering efficiency—that's Davison PA-400. Write Dept. 2612 for full information.

W.R. GRACE & CO.
DAVISON CHEMICAL DIVISION
BALTIMORE 3, MARYLAND



where efficiency and dependability are

Drymaster



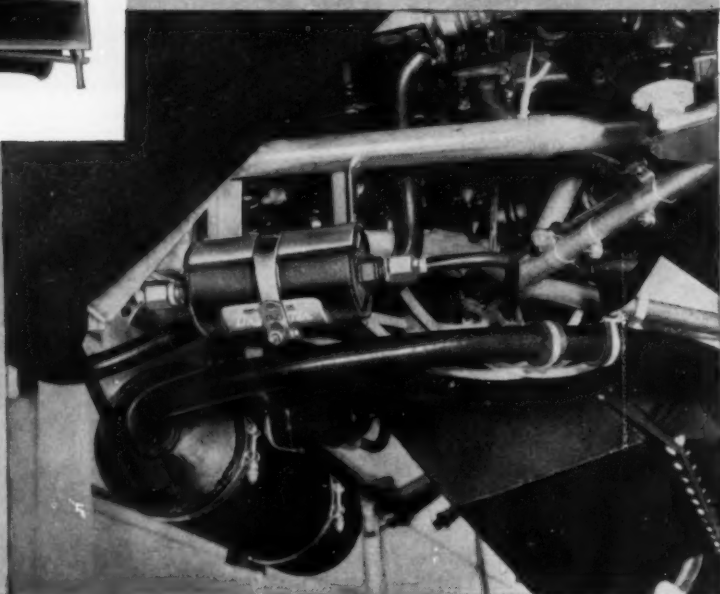
**America's first jet liner . . . Boeing 707
utilizes dependable Drymaster Filter
Driers for air conditioning**

Two Drymaster Filter Driers are integral components of the AiResearch Freon system, made by the AiResearch Manufacturing Co., Division of The Garrett Corp. of Los Angeles, California, that supplies 20 tons of cooling for air conditioning in America's first jet liner . . . the Boeing 707. In flight operation, an AiResearch turbocompressor supplies air first to a primary heat exchanger where heat of compression is removed. The air then passes through the Freon evaporator where it is cooled and de-humidified and is then introduced into both cabin and cockpit areas where it provides cool air for passengers and crew. Drymaster Filter Driers were selected for this tough application because they successfully met all the unusual, demanding requirements of high speed jet liner travel. In spite of constantly changing load requirements caused by extreme variations in altitudes and temperatures, Drymasters give outstanding balanced performance on the ground or at 30,000 feet.



AiResearch Freon system pictured above is one of two units installed in the Boeing 707. Each unit supplies 10 tons of cooling for air conditioning the entire plane.

View at right shows Drymaster Filter Drier as an important component of Boeing 707's air conditioning system. The Drymaster Filter Drier will also be employed in air conditioning units for other jet aircraft now being manufactured, the Douglas DC 8, Convair 440 and the Lockheed Electra.



MUELLER BRASS

VAMPCO ALUMINUM PRODUCTS, LTD., STRATHROY, ONTARIO •

Circle No. 14 on Reader Service Card

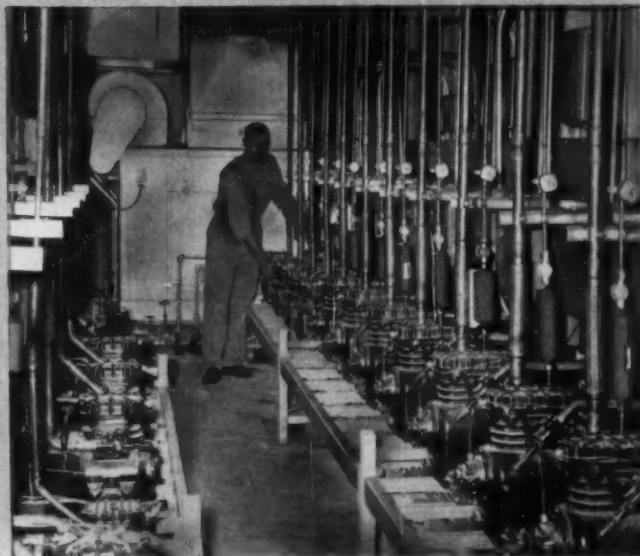
vital it pays to depend on FILTER DRIERS



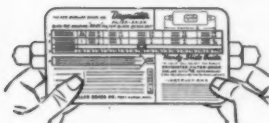
Huge King Sooper Market uses dependable Drymaster Filter Driers for refrigeration

To provide efficient and reliable refrigeration for frozen foods, King Sooper Market in Denver, Colorado, has installed the largest refrigeration system of its type in the Rocky Mountain area. In this system, which handles 1160 lbs. of Freon, there are about 3 miles of Mueller Brass Co. copper tube, fittings, valves, 28 Drymaster Filter Driers and other accessories. Drymasters have three outstanding design features that insure removal of all harmful moisture, acid, sludge and foreign particles from this big system. A new inlet distribution disc disperses refrigerant evenly throughout the entire filter block desiccant; the desiccant itself is a fully activated, pressure molded briquette that has proved itself superior in balanced cleaning and drying qualities to all other desiccants. The third unique feature is the perforated center filter tube covered by a super-fine metal screen that makes a doubly effective safeguard against dirt and sludge. The Drymaster Filter Drier is unexcelled in exacting applications like this, because it is the only filter drier that gives guaranteed balanced performance. It offers superb filtering and drying properties, without sacrificing one for the other.

Refrigeration system at King Sooper Market. Installation by Arctic Refrigeration, Inc., Denver, Colorado. Supplies furnished to the contractor by Refrigeration Distributors Corporation of Denver.



266



New, revolutionary slide-guide helps you select the correct Drymaster Filter Driers for every installation quickly and easily . . . Available free . . . send for yours today.



Catalog R-157 gives complete information on all Mueller Brass Co. refrigeration and air conditioning products. Get your copy today.

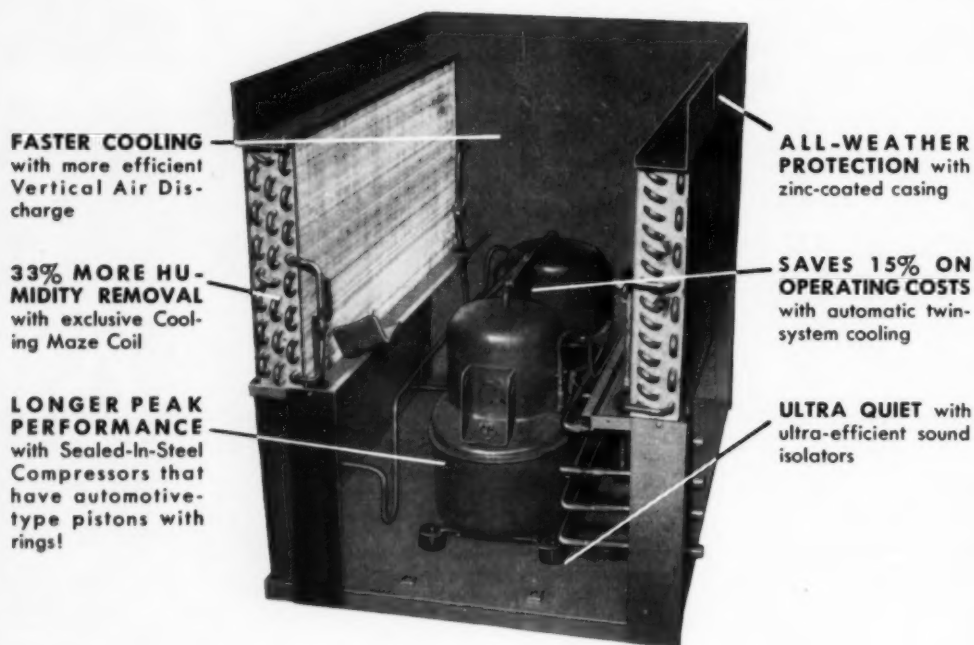
CO. PORT HURON 14, MICHIGAN

Exclusive Canadian Representative for Mueller Brass Co. Air Conditioning and Refrigeration Products

Circle No. 14 Reader Service Card

Look Inside...See Why...

ONLY YORK BRINGS YOU Blue Chip Product Advantages Like This:



There's a complete line of York Residential Air Conditioners—air- and water-cooled—and every one is loaded with sales-clinching exclusives! There are York Twinlines with Twin Compressors that slash operating costs 15% or more... York Pathfinders that

fit waste space in the attic, basement, crawl space and garage or carport... even York Comfort Centers that provide both winter heating and summer cooling from one compact unit! Call your York Distributor, today, for full details!

York Is The Blue Chip Air Conditioning Line For '59

YORK OFFERS YOU The Industry's Only Blue Chip Dealer Franchise

Built-In Blue Chip Quality

The York Blue Chip Franchise is based on the conviction that delivery of a "full dollar's worth of quality for every dollar of purchase price" is the only foundation upon which a successful, enduring business can be built.

Blue Chip Consumer Values

York believes that "price without value" is meaningless...that today's realistic consumer is interested first and foremost in true value and benefits.

Blue Chip Creative Selling Plan

York offers dealers Blue Chip national advertising backed by Blue Chip *retail* advertising. Local promotions even include a sensational new trade-in plan for homeowners!

Blue Chip Selective Franchise

York is engaged in a complete refranchising program for only those dealers who want to do *creative selling for a profit*.

Blue Chip Company History

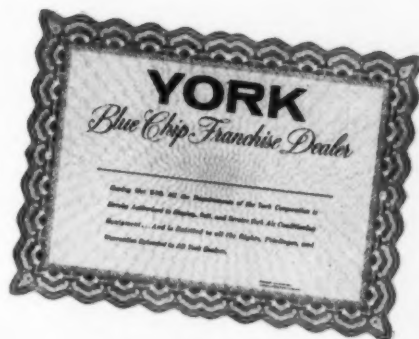
Since 1885, York developed the first room air unit, air conditioned the first theater and perfected the first practical heat pump for homes. Today, as always, York is the name that stands squarely behind its products and its dealers.

Your Future and Fortune Now Lies with

YORK

YORK CORPORATION, SUBSIDIARY OF BORG-WARNER CORPORATION, YORK, PA.

Air-Conditioning, Heating and Refrigeration and Ice Equipment Products for Home, Commercial and Industrial Installation



PLUS

Bonus Incentives For Creative Selling!

York dealers can win a fantastic array of silver prizes for the home—flatware, serving pieces, holloware—in Sterling and Silver Plate! And, they can win a vacation in exotic Nassau, or a fabulous all-expense tour of Paris and London!



BORG-WARNER
RESEARCH & ENGINEERING
MAKE IT BETTER

Circle No. 15 on Reader Service Card

You can't miss when you Marley Packaged

If you're aiming for complete satisfaction—yours and your customers—when you install packaged cooling towers, just set your sights on the Marley line for '59. In the wide variety of sizes, styles and structural materials that Marley makes available, you're sure to find a tower that just hits the mark for any cooling requirement. Forced draft, induced draft, natural draft—steel, wood, asbestos cement board casings—you can call your own shots when you specify Marley.

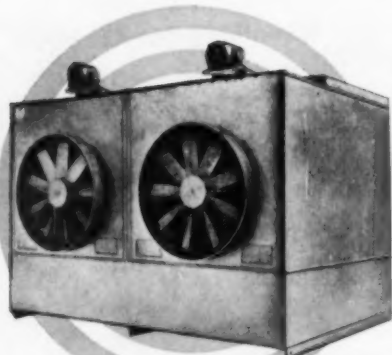
Of equal importance, you receive double-barreled support on every cooling job. Your Marley distributor has been carefully selected for his ability and eagerness to serve you both before and after your purchase of any Marley product. Back of him stands The Marley Company's assurance that every product will be satisfactory to every purchaser—a guarantee fulfilled for 36 years.

That's why we say you can't miss with the Marley line for '59. Look it over . . . then get in touch with your local Marley distributor!



The Marley Company

Kansas City, Missouri



DUAL AQUATOWERS®

DUAL AQUATOWERS® (Models 4342, 4352 & 4362), the latest additions to the complete line of Marley Aquatowers, expand capacities of the line up to 120 tons, nominal. Each model has dual fans, dual hot water basins and dual cooling chambers mounted on a common basin. They are especially applicable for "sensitive" cold water temperature applications. Hot dip galvanized finish.

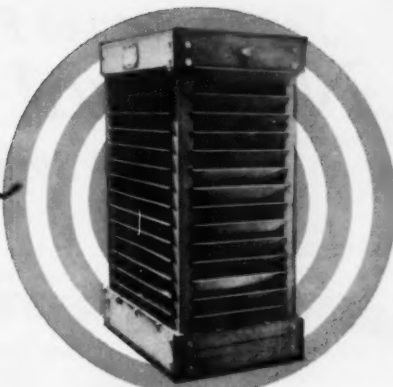


AQUATOWERS®

AQUATOWERS® (Models 4205 thru 4210) for services from 5 to 10 tons, nominal, feature recessed fan venturis and covered hot water basins. Their attractive "appliance-like" design makes them especially applicable where appearance is a factor. Like other Aquatowers, they are hot dip galvanized, have close-packed fill, diffusion decks, drift-eliminators and heavy duty mechanical equipment.

Circle No. 16 on Reader Service Card

set your sights on a Cooling Tower



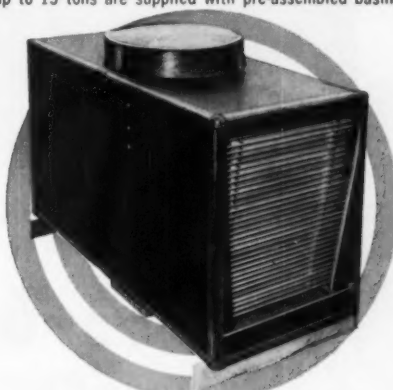
SPRATOWERS®

SPRATOWERS® of natural draft design provide maximum economy with consistent high performance. Spray nozzles of non-clog design developed scientifically by Marley produce maximum water break-up with highest water cooling efficiency. Structure is extra-sturdy, rugged columns are double-bolted. Spratowers are available in capacities from 3 tons up—models up to 15 tons are supplied with pre-assembled basins.



AQUACOOLERS®

AQUACOOLERS® feature full capacity performance and leak-proof, whisper-quiet operation—all in minimum installed plan area. Casings, basins and centrifugal blowers are hot dip galvanized. Marley nozzles and wood filling provide maximum water break-up and air-water contact. Capacities range from 5 to 50 tons, nominal. Smaller models ship completely assembled; larger in 2 sub-assemblies.



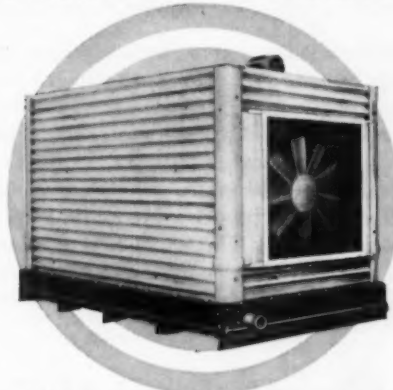
PERMATOWERS®

PERMATOWERS® set a new standard of cooling tower durability through liberal use of inert materials impervious to corrosive conditions. Vertical air discharge, quiet operation, and immunity to corrosion permit their use in any location, any climate. Available in capacities ranging from 5 to 75 tons, nominal. Permatowers offer all the Double-Flow® design advantages of performance, simplicity and permanence.



AQUATOWERS®

AQUATOWERS® (Models 4315 thru 4360) assure long, trouble-free service, top performance, and greatest economy in services from 15-60 tons, nominal. Packaged construction permits easy installation; clamp-down design permits easy disassembly. Rugged heavy-duty construction and hot dip galvanized finish minimize corrosion and maintenance. The world's standard in this capacity range.



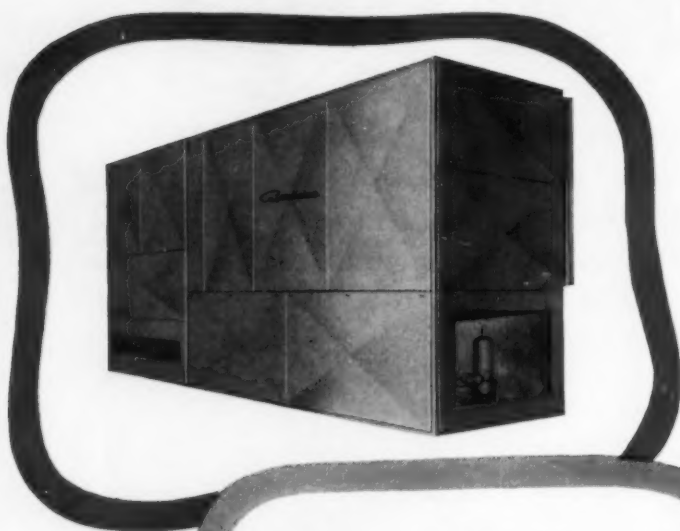
WOOD AQUATOWERS®

WOOD AQUATOWERS® are of forced draft design with vertical air discharge, hence, can be installed in confined areas often unsuitable for towers of different design. Structural materials—long life redwood framework, asbestos cement board casing and hot dip galvanized steel components—assure long life under corrosive conditions. 5 models available with nominal capacity of 20-50 tons.

For Unmatched Flexibility National - U. S.

Central Station

Packaged Air Conditioning



7½-60 h. p.

water-cooled
or
evaporative condenser

Water-cooled or evaporative condenser models in nine sizes from 7½ to 60 h.p. provide a selection from which a combination can be arranged to fit any particular situation. Each model is available in different arrangements, matched to meet any space requirements.

All units are completely engineered and packaged—require only power, ductwork and water supply connections for quick installation. And, all are factory pre-tested to minimize performance testing time.

Write today for Form AC-1001 describing the new Capitolaire Central Station *Packaged* Air Conditioning System, or contact your nearest National-U.S. representative. He'll be glad to help you.



National-U. S. Radiator CORPORATION

HEATING AND AIR CONDITIONING DIVISION
Johnstown, Pennsylvania

In Canada: 77 York Street, Toronto

Sixty years in thermal hydronics

Circle No. 17 on Reader Service Card

58-21

as we see it...

by Jim McCallum

Our industry has taken another stride forward in the field of higher education with the establishment of an annual \$500 scholarship at California State Polytechnic College.

This scholarship will be awarded each spring to some student at the college who is planning to enter the field of air-conditioning, heating, or plumbing. It is being financed by the Hugh H. Logan Foundation of Glendale, Calif.

More academic incentives of this type will mean more and better qualified people in our field. Let's hope the trend continues.

* * *

Construction in 1959 will set new records, both in contracts awarded and work completed, if the annual prediction of F. W. Dodge Corp. proves correct.

Contracts this year for all types of construction will total \$35.6 billion, a 3% increase over 1958's estimated \$34.7 billion, according to this forecast.

This should be good news for all dealer-contractors in the air-conditioning and commercial refrigeration field whose business potential expands in proportion to new construction activity.

Last month this column observed that every evidence pointed to a marked upturn for our business this year. The Dodge forecast offers new support for this conviction.

* * *

America will never run out of fresh water if Carrier Corp.'s efforts to convert sea water into fresh water through a direct-freezing process live up to expectations.

Construction of a pilot plant for this purpose is under way. It is designed to produce 15,000 gallons of fresh water daily, and to test both the technical and economic potential of the process.

The pilot plant is aimed at qualifying the process for one of

the million-gallon daily production-demonstration units authorized by Congress.

Need for such action has been indicated by a Congressional report stating in part: "An acute shortage of water is rapidly developing in many parts of the U. S. Sources of water on which we normally rely are gradually being exhausted. Through use and re-use the supplies from these sources are being contaminated. There is an urgent need of finding fresh water sources."

Refrigeration may show the way.

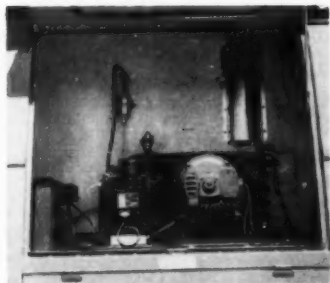
Husbands are the most enthusiastic buyers of air-conditioning, and wives are its biggest boosters.

That's what John W. Norris, president of Lennox Industries, Inc., has decided on the basis of opinions expressed during the unrehearsed forums for homemakers that the company has conducted for the past couple of years.

So if you really want to sell residential air-conditioning, just get the husband and wife together — and how can you miss?



A NEW WAY to transport frozen foods and other perishables is in the Volkswagen "Silver-Kold" reefer developed by Mayer-Simmons, a Volkswagen agency in Walnut Creek, Calif. Dow Styrofoam insulation is used on the walls, ceiling and floor of the 112-cu.ft. storage compartment. The refrigeration unit (below) is powered by the vehicle's own engine. It cycles automatically while the van is en route and during stops for delivery. Provision is made for manual hot-gas defrost while en route.



RELAY FIRMS MERGE

Sam Hammer Inc. and Motors & Armatures, Inc. have merged into one operational organization under the name of Relay Div., Motors & Armatures, Inc.

The combined organization will serve as authorized factory distributor of General Electric, Delco, Klixon and R-B-M relays, and also GE leak detectors and oil capacitors. The firm will be located at 31-24 14th St., Long Island City, New York.

All merchandise handled will be boxed original equipment having the trade marking of the manufacturer. It will be sold through the wholesale trade only. A combined catalog is being prepared.

NEW OFFICE OPENED

Wolverine Tube, Div. of Calumet & Hecla, Inc., has opened a new sales office in Cleveland. R. B. Flynn, district sales manager, will work out of the Cleveland office.

JARROW *identi-line*

"JARROW IDENTICAL REPLACEMENT DOOR GASKETS (IDENTICAL TO ORIGINAL)

*mean satisfied customers...
less time on the job...
more money for me."*

- Why?... 1. NO MEASURING
2. NO CUTTING
3. NO NOTCHING
4. NO FORMING**

Now my independent wholesaler can give me the **correct** Jarrow Gasket I need for **GENERAL ELECTRIC, HOTPOINT and CROSLEY** Refrigerators. (additional makes coming.)

It's simple. Just give him the refrigerator model number and he'll supply you with the **identical replacement** door gasket.

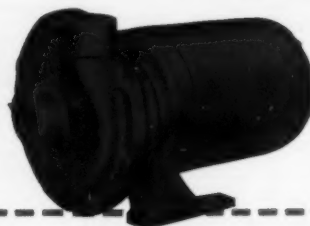
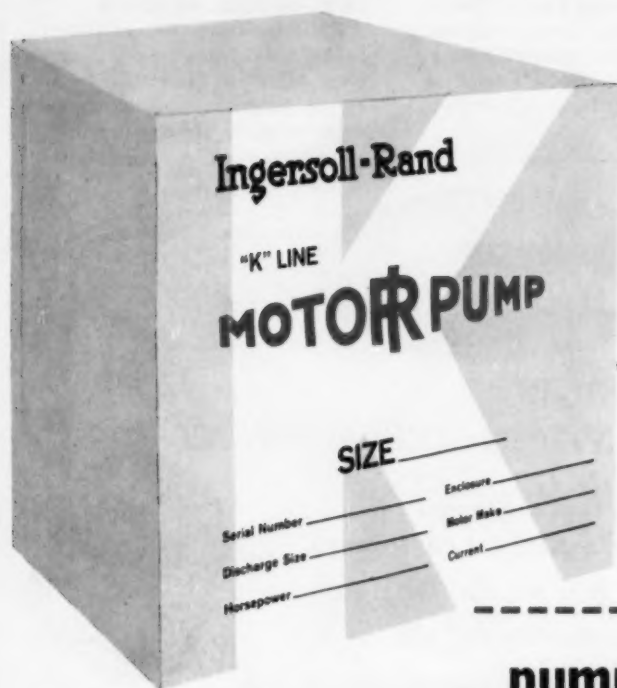
ATTENTION WHOLESALER:

Less selling time is needed at your counter for these **Identical ("identi-line") Replacement Door Gaskets**. Be sure you have them in stock. Your Jarrow "Key Chart" sheets will instantly tell the right gasket your customer calls for.

JARROW PRODUCTS INC.
Door Gasket Specialists for Nearly a Third of a Century
1238-50 W. FULLERTON AVE., CHICAGO 14, ILL.



New I-R "K" Line Motorpump...



**pumping efficiency that
matches all air conditioning systems**

Now—with Ingersoll-Rand's new "K" Line Motorpumps—you have a complete range of efficient pumping power to meet the requirements of any air conditioning system! "K" Line Motorpumps add low cost dependability backed by the recognized leader in centrifugal pumps—Ingersoll-Rand.

These packaged Motorpumps come in 20 sizes to cover a range up to 775 gallons per minute and heads up to 190 feet. They are easily stocked and easily selected for a given job. Moreover, their rugged construction and modern features combine to deliver continuous, trouble-free service—saving you time and trouble in costly call backs.

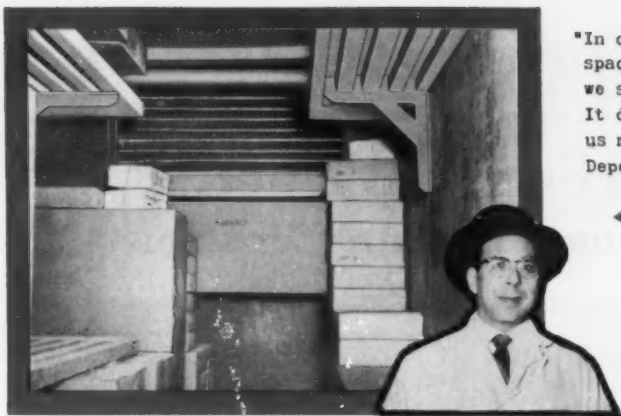
See for yourself how the new I-R "K" Line Motorpumps can increase your sales and profits. Write today for complete information to: Sales Manager, Merchandising Division, Ingersoll-Rand Company, 11 Broadway, New York 4, N. Y.

Ingersoll-Rand

Merchandising Division
11 Broadway, New York 4, N. Y.

9-871A

Circle No. 19 on Reader Service Card



"In our crowded meat storage compartment, space is money. That's one of the reasons we selected Tenney's compact TEH-DEFROSTOLATOR. It does a man-sized job in a space that allows us many more cubic feet for payload storage. Dependable service at all times."

Julius Altman
Manhattan Provision Co., N.Y.C.

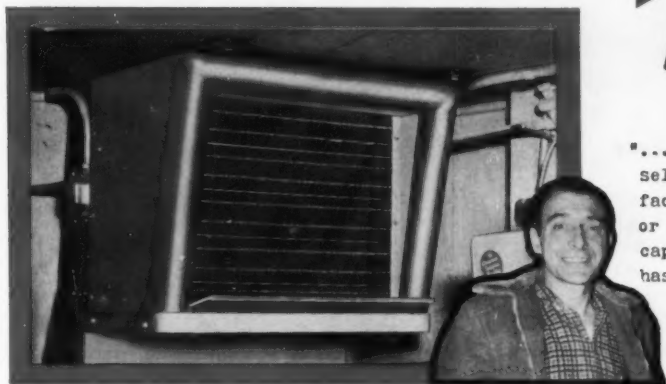
"Our main problem was defrosting. It had to be automatic, fast and reliable. Since installing our Tenney unit, our entire refrigeration operation has been working beautifully. And the overall cost was surprisingly low."

Jack Lefman
Brook Park Center, Inc., Bronx, N.Y.



"...each Tenney TEH-DEFROSTOLATOR is completely self-contained. We never need additional factory parts for multiple unit installations... or additional inventory for maximum coverage of capacities. The simple installation requirement has meant high profits on labor time."

George R. Stokes
Stokes Refrigeration Co., Inc., N.Y.C.



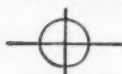
Simple installation . . . Performance . . . Satisfied Customers
Get all 3 with . . .

Tenney TEH-Defrostolator!

Stokes Refrigeration Co., Inc. and their many customers know why Tenney's TEH-DEFROSTOLATOR is fast becoming a by-word in commercial refrigeration. The TEH-DEFROSTOLATOR features electric hot gas defrost *independent* of the condensing unit. Time clock actuated, pres-

sure control termination assures positive defrost each time. In short, Tenney is ideally suited for all tough jobs, since the problem of condensing unit location is eliminated. On your next bid don't take chances, take Tenney—get the most and give the most to your customers.

Engineers and Manufacturers of Refrigeration
and Environmental Equipment



Write for complete information.

Tenney
ENGINEERING, INC.

1090 Springfield Road, Union, N. J. • Plants: Union, N. J. and Baltimore, Md.

Circle No. 20 on Reader Service Card

Field Report on G-B Duct in 800-unit Capehart Housing Project

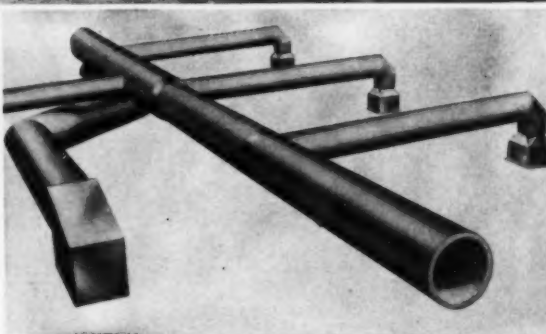


Job location: Myrtle Beach Air Force Base, S. C.

Contractor: Air Conditioning Supply Co., Winston-Salem, N. C.

"We are pleased to report that G-B Duct is living up to our expectations in the 800-unit Capehart Housing Project," says Mr. Sam W. Turner, Air Conditioning Supply Co., Winston-Salem, N. C., "and is performing very satisfactorily with the Westinghouse heat pump units. Our low bid for this project was based, in part, on our belief that even though the initial cost of G-B Duct is slightly higher, installation savings soon make it the most economical insulated duct system."

Have you tried GB-Duct?—the first and only pre-fabricated round glass fiber duct tested and labeled by Underwriters' Laboratory as an air conditioning and heating duct. Here's how it saves you time and



money: G-B Duct comes in one-piece 6' sections, ready to use—no preassembly, no folding. It's easy to cut and fit with a knife and the templates provided. Sizing is no problem because G-B Duct is made in the same nominal sizes as round sheet metal pipe and fittings.

With G-B Duct you get a neater, better job—faster. Uniformly thick glass fiber walls provide positive thermal insulation and maximum sound absorption, while the continuous airtight plastic vapor barrier sleeve positively prevents condensation.

For name of your nearest supplier, see adjoining column

GUSTIN-BACON

Manufacturing Company



228 W. 10th. St., Kansas City, Mo.

Thermal and acoustical glass fiber insulations . . . molded glass fiber pipe insulation . . . couplings and fittings for plain and grooved end pipe

Circle No. 21 on Reader Service Card

Field Report on G-B Duct in 800-unit Capehart Housing Project



G-B DUCT DISTRIBUTORS (See ad on facing page)

AKRON, Ohio, The Asbestos Supply Co. •
ALBANY, Ga., Industry Insulation Co.
ALBUQUERQUE, Mt. States Insulation Co.
AMARILLO, Morrison Supply Co.
ATLANTA, Ga., Reynolds Aluminum Supply Co.
The Thompson Company
AUGUSTA, Ga., Noland Company
BALTIMORE, Md., Leroy Insulation Company
BEAUMONT, Tex., Solar Supply Company
BILLINGS, Mont., Big Horn Supply, Inc.
BIRMINGHAM, Ala., Hall-Newsome Co.
Hart-Greer, Inc.
Shook & Fletcher Supply Co.
Reynolds Aluminum Supply Co.
BOSTON, Mass., Homans-Kohler, Inc.
BUFFALO, Industrial Insulation Sales, Inc.
North Star Supply Company
CHARLESTON, W. Va., Dunbar Metal & Sup. Co., Inc.
CLEVELAND, The Miles Materials Company
CHICAGO, E. C. Carlson Company
COLUMBUS, Santele Brothers
CORPUS CHRISTI, Precision Insulation Co.
DALLAS, Insulation Supply Co.
Payne-Ladewig, Inc.
DECATUR, Ga., Lennox Industries
DENVER, Gene Wright Lumber Co.
DES MOINES, Iowa Asbestos Company, Inc.
DETROIT, G. L. Johnston Co.
ENGLEWOOD, N. J., Englewood Supply Co.
EVANSVILLE, Ind., George Koch Sons, Inc.
FT. WORTH, Bracken Co.
GULFPORT, Miss., Paine Supply Co.
HOUSTON, Precision Insulation Co.
INDIANAPOLIS, Central Supply Co.
JACKSONVILLE, Ferber Sheet Metal Works
Florida Air Conditioners
Southernair Distributors
KANSAS CITY, Mo., Central Supply Co.
Superior Distributing Corp.
KNOXVILLE, Tenn., Holston Air Conditioning Corp.
LAKE CHARLES, La., Solar Supply Company
LANE, Tex., Anderson-Sturgis Company
LITTLE ROCK, Gunn Distributing Co.
LOS ANGELES, Western Fibrous Glass Products Co.
LOUISVILLE, General Insulation & Roofing Co.
LUBBOCK, Tex., Morrison Supply Co.
MACON, Ga., Industry Insulation Co.
MEMPHIS, A. T. Distributors, Inc.
MIAMI, Crabtree Insulation Co.
Fiber Duct Dist.
Reynolds Aluminum Supply Co.
MYRTLE BEACH, S. C., Air Conditioning Supply
NASHVILLE, Central Air Conditioning & Heating Co.
NEW ORLEANS, Eagle Asbestos & Packing Co.
Solar Supply Co.
NEW YORK, Eastern Steam Specialty Co.
NORFOLK, Va., Automatic Equipment Sales Co.
OMAHA, Cardinal Supply & Mfg. Co.
ODESSA, Tex., Morrison Supply Co.
ORANGE, Conn., Insulation Supply Co.
PASSAIC, N. J., Rai Supply Co.
PHILADELPHIA, John F. Scanlan, Inc.
PHOENIX, Kircher Asbestos & Rubber Co.
PITTSBURGH, Dravo Corp.
RALEIGH, N. C., Reynolds Aluminum Supply Co.
RICHMOND, Va., Automatic Equip. Sales Co., Inc.
Reynolds Aluminum Supply Co.
ROCHESTER, N. Y., Rochester Oil Burner Company
ROCKFORD, Ill., Mott Brothers Co.
SALT LAKE CITY, Bullough Asbestos Supply Co.
SAN ANTONIO, The Bracken Company
SAN DIEGO, Western Fibrous Glass Products Co.
SAN FRANCISCO, Western Fibrous Glass Products Co.
SAVANNAH, Ga., Reynolds Aluminum Supply Co.
SEATTLE, Western Fibrous Glass Products
SHREVEPORT, La., Frith Sales Co.
SOUTH BEND, Place & Co.
ST. LOUIS, Hollander & Co., Inc.
SULLY, Ill., Lewis David, Inc.
TALLAHASSEE, Baker's, Inc.
TAMPA, Eagle Roofing & Art Metal Works, Inc.
TULSA, Okla., Ball Distributing & Engrg. Co.
VANCOUVER, B. C., Fleck Brothers Limited
WASHINGTON, D. C., Walter E. Campbell Co.
WINSTON-SALEM, N. C., Air Conditioning Supply

Circle No. 21 on Reader Service Card
FEBRUARY 1959

Calendar of Industry Events

May 3-6, 1959

Air-Conditioning and Refrigeration
Institute
(Board and Annual Meeting)
The Homestead
Hot Springs, Va.

June 7-11, 1959

American Society of Heating and
Air-Conditioning Engineers
(Semiannual Meeting)
Vancouver, B. C.

June 22-24, 1959

American Society of Refrigerating
Engineers (Annual Meeting)
Lake Placid Club
Lake Placid, N. Y.

October 5-7, 1959

American Gas Association
(Annual Convention)
Conrad-Hilton Hotel
Chicago, Ill.

O. P. BRAUER ELECTED PRESIDENT OF NHAW

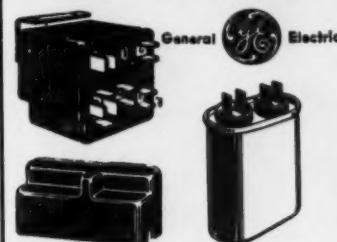
Oscar P. Brauer, Brauer Supply
Co., St. Louis, Mo., has been
elected president of National Heat-
ing & Airconditioning Wholesalers.
President elect is Harold W.
Squire, Tiffin Art Metal Co., Tif-
fin, Ohio.

Other new officers are: John B.
Allen, Allen Heating Supply, Inc.,
Buffalo, N. Y., vice president; J.
Orville Garrett, Loman Supply &
Equipment Co., Greensboro, N. C.,
secretary; R. B. Hesling, Climate
Distributing Co., Van Nuys, Calif.,
treasurer; and W. R. Bull, Colum-
bus, Ohio, executive director.

The new board of trustees: Re-
gion 1, Seymour Cohen; Region
2, Saul Franklin; Region 3, Ben
F. Carter; Region 4, John Burn-
side; Region 5, George Primich;
Region 6, Lee J. Haines; Region
7, George Wheelock Jr.; Region
8, James F. Primm; Region 9,
C. B. Buckley; Region 10, Clare
T. Smallcomb; Region 11, Gordon
Bouskill; Region 12, David M.
Brousson; and ex-officio, John
Robertson.

Circle No. 22 on Reader Service Card

Refrigeration and Air Conditioning RELAYS and OIL CAPACITORS



REQUEST OUR CATALOG SHEETS

RELAY DIVISION Motors & Armatures Inc.

— 31-24 14TH STREET —
LONG ISLAND CITY 6, N. Y.
Sold Through Wholesalers Only

Remove Scale quickly and safely with **anco** Condenser Cleaner

You simply dissolve

ANCO Condenser
Cleaner in the sump
while the system op-
erates and within 2 to
15 hours the condenser
tubes are cleaned.
High head pressure
from fouled tubes
drops to normal. Op-
erating efficiency is
restored. ANCO Con-
denser cleaner will not
damage metals and is
not hazardous to handle. Try it once
and you'll use it always.



Keep Cooling towers free of algae and
slime with Anco Algacide.

Protect condenser against rust, scale
and pitting with ANCO Water Treat-
ment.

For all ANCO products see your
wholesaler or write direct.
SPECIALISTS IN MAKING WATER BEHAVE



Anderson

Chemical Company, Inc.
Box 1424 • Macon, Georgia

Circle No. 23 on Reader Service Card



Modern air-conditioned home of Kal, Ehrlich & Merrick, Washington, D.C. advertising agency

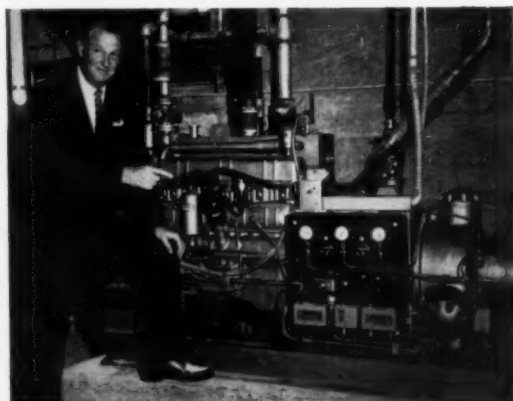
"Nothing to do—but enjoy it, with our all-year READY-POWER GAS air-conditioning!"

*Says Harry L. Merrick, Sr.
President, Kal, Ehrlich & Merrick
Advertising Agency*

"Only the best air-conditioning system would do for our new building, and experience proves the best is definitely gas", continues Mr. Merrick. "Our Ready-Power air conditioner gives us the exact climate control we want... and it's extremely inexpensive to operate."

Ready-Power's variable speed operation offers *constant, precise* control of humidity and temperature without the variations common to on-off systems. Because they combine the outstanding economy of gas fuel with automatic metering to match the load on hand, Ready-Power units have the lowest known operating costs... *less than a penny per ton per hour!*

For information on how you can benefit by installing modern Gas air conditioning equipment,



"This is our Gas-fired READY-POWER compressor. It's absolutely care-free and as thrifty to operate as we could wish."

call your Gas Company's commercial specialist or write to the Ready-Power Company, Detroit 14, Michigan. *American Gas Association.*

Circle No. 24 on Reader Service Card



On Stream

a brand-new plant
producing

Ucon

BRAND
refrigerants

Just completed... a spanking-new plant at Institute, West Virginia, built by Union Carbide Chemicals Company to supply 50 million pounds of fluorocarbons a year! That means new UCON Refrigerants are available now... bringing you *all* the advantages of the nation's newest refrigerants. You'll get...

UNSURPASSED QUALITY, meeting the strictest refrigeration and air conditioning industry standards for dryness and purity.

NEW PERSONALIZED SERVICE from technically-trained representatives—the UCON Refrigerants service force is the largest in the country.

ON-TIME DELIVERY from the largest network of distribution points serving the refrigeration and air conditioning industries.

FULL CHOICE OF UNIT SIZES. Meet *your* quantity needs with UCON Refrigerants supplied in standard-sized units.

TO GET FULL DATA ON UCON Refrigerants now, see your wholesaler, or write: UCON Refrigerants, Union Carbide Chemicals Company, 30 East 42nd Street, New York 17, N. Y. Call, write or wire us, any time! Attention, Dept. G-2.

"Ucon" and "Union Carbide" are registered trade marks of Union Carbide Corporation.



These 5 UCON Brand Refrigerants will meet your refrigeration and air conditioning needs

UCON Refrigerant 11 Trichloromonofluoromethane
UCON Refrigerant 12 Dichlorodifluoromethane
UCON Refrigerant 22 Monochlorodifluoromethane
UCON Refrigerant 113 Trichlorotrifluoroethane
UCON Refrigerant 114 Dichlorotetrafluoroethane

UNION CARBIDE CHEMICALS COMPANY Division of Union Carbide Corporation

Circle No. 25 on Reader Service Card

THE BUSINESS

NEW PROFITS

from the most exciting development in home comfort in years!

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM
W. P. MARSHALL, PRESIDENT

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

1201

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

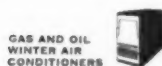
MUELLER CLIMATROL DEALERS= EVERYWHERE, U.S.A.
ANNOUNCING: RESIDENTIAL HUMIDITY-CONTROL AIR CONDITIONING.
MUELLER CLIMATROL ANNOUNCES NEW MONEY-MAKER EXCLUSIVELY YOURS. FOR FIRST TIME COMPLETE ONE-PACKAGE CENTRAL SUMMER AIR CONDITIONER POSITIVELY CONTROLS BOTH TEMPERATURE AND HUMIDITY 24 HOURS A DAY FOR COMPLETE COMFORT. SILENT, TROUBLE-FREE, AUTOMATIC. NOTHING ELSE LIKE IT. ASK ABOUT TYPE 925 NOW= H P MUELLER, PRESIDENT=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE



2075 W. Oklahoma Ave., Milwaukee 1, Wis.

America's most complete line — Comfort Control for healthful living



GAS AND OIL WINTER AIR CONDITIONERS



GAS AND OIL BOILERS



MANUAL AND ELECTRIC HUMIDIFIERS



GAS AND OIL SUMMER AIR CONDITIONERS



GAS AND OIL CONVERSION BURNERS



ELECTRONIC AIR FILTER

WESTERN ZONE: 1024 WESTMINSTER AVENUE, ALHAMBRA, CALIF.

IN CANADA: 2490 BLOOR STREET WEST, TORONTO 9, ONTARIO

Circle No. 27 on Reader Service Card

FEBRUARY 1959

America's Most Complete Family of Air Conditioning Thermostats!

General Controls continues to set the pace in creating the kind of *advanced design* thermostats that afford maximum selectivity in air conditioning thermostats. Not only do General Controls thermostats please the homeowner with their beauty and simplicity of line, they also signify *quality*—and prove it by delivering the top performance engineered into systems and related equipment. Consult your nearby General Controls branch office for complete details on the many air conditioning thermostats available.

ALL WITH MODERN
MERCURY
SWITCH
DEPENDABILITY...

118 FUNCTION VARIATIONS
TO CONTROL ANY SYSTEM

- COOL, HEAT, FAN, AUTO, OFF, RESET SWITCHING FUNCTIONS
- SINGLE OR TWO-STAGE HEATING WITH SINGLE OR TWO-STAGE COOLING
- HEAT AND COLD ANTICIPATION
- DAY AND NIGHT CLOCK PROGRAMMING
- SINGLE DIAL OR TWO DIAL TEMPERATURE SELECTION
- MANUAL OR AUTOMATIC CHANGEOVER

For every heating and cooling requirement: gas, oil, coal or electric; evaporative, chilled water and heat pump systems.

5 basic styles
harmonize with
any architectural
or decorating theme.

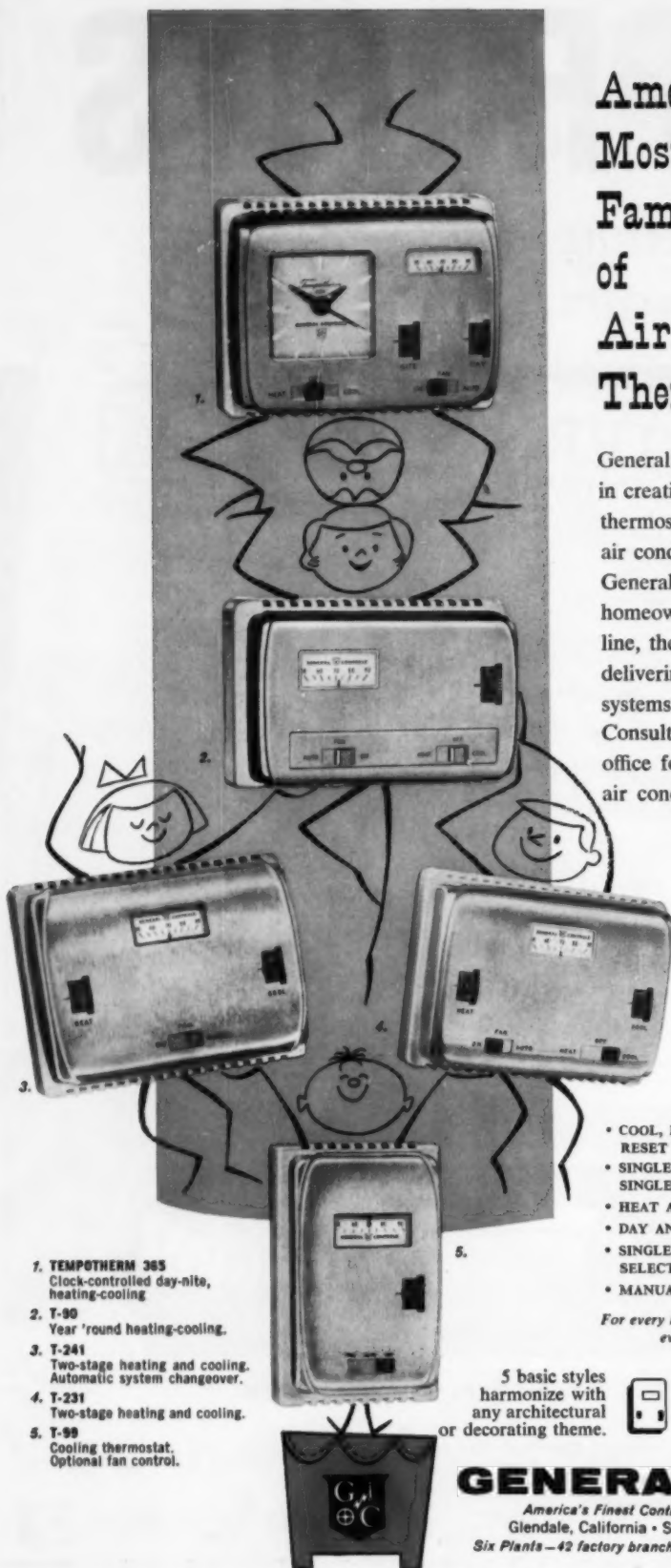


GENERAL CONTROLS

America's Finest Controls for Home, Industry, and the Military
Glendale, California • Skokie, Illinois • Guelph, Ontario, Canada
Six Plants—42 factory branch offices serving the United States and Canada

Circle No. 28 on Reader Service Card

THE BUSINESS



1. **TEMPOTHERM 365**
Clock-controlled day-nite,
heating-cooling
2. **T-90**
Year 'round heating-cooling.
3. **T-241**
Two-stage heating and cooling.
Automatic system changeover.
4. **T-231**
Two-stage heating and cooling.
5. **T-99**
Cooling thermostat.
Optional fan control.

TURN

TYPHOON



Flexibility of Typhoon units proves itself once again in this recent installation in a new super market. Four ceiling mounted air handling units totaling 40 tons were suspended from the ceiling to save valuable floor space. Working with compatible air cooled condensing units mounted on the roof, these Typhoon units will provide the ultimate in cooling and heating comfort all year round.

AND HAVE THE RIGHT EQUIPMENT, AT THE RIGHT PRICE, EVERY TIME!

Now you can fill every need, solve any problem with Typhoon's exclusive residential, commercial and industrial equipment! A full range of air cooled units from 2 tons to 20 tons, both packaged and as split systems. Water cooled units from 3 tons to 75 tons. Remote air cooled condensing units to 20 tons, water cooled to 75 tons. Gas and oil fired furnaces in horizontal, vertical upflow and counterflow types. And now, Typhoon's line of compact air-to-air heat pumps will open a new era in air conditioning for you. Each and every unit with built-in Power Reserve—a combination of superior components and oversize parts that insures dependable performance above rated capacity through all weather extremes. All copper condensers in water cooled units, largest coil surfaces and rugged 11 and 14 gauge metal cabinets. Find out how Typhoon quality and flexibility can add to your reputation for getting the job done better, faster, more economically—with more profit for you.

TYPHOON
DIVISION OF HUPP CORPORATION

Typhoon Air Conditioning Company, Division of Hupp Corporation
505 Carroll Street, Brooklyn 15, New York

- ☐ Have a representative call me for an appointment.
☐ Please send full product literature.

Name

Firm

Address

98-4

Get factory-sealed assurance that your refrigerants are free of impurities, low in moisture, accurate in weight by specifying Pennsalt Isotron®. Pennsalt is the originator of factory-sealed refrigerants . . . gives you this guarantee with Isotrons in both cylinders and convenient, disposable Handi-Can containers.

Isotrons are produced in the nation's most modern fluorinated refrigerants plant. They're *extra-pure* and *extra-dry* when made and packaged . . . *stay* extra-pure and extra-dry until you use them.

Be safe, be sure. When you buy refrigerants, get Isotrons in tamper-proof containers packed and sealed by the original producer. Write or call for further information. Isotron Department 671, Pennsalt Chemicals Corp., 3 Penn Center, Phila. 2, Pa.

ISOTRON Refrigerant 11 (CCl_3F)

ISOTRON Refrigerant 12 (CCl_2F_2)

ISOTRON Refrigerant 22 (CHClF_2)

ISOTRON Refrigerant 113 ($\text{CCl}_2\text{F}-\text{CClF}_2$)

ISOTRON Refrigerant 114 ($\text{CClF}_2-\text{CClF}_2$)

when you buy refrigerants...

look for this seal

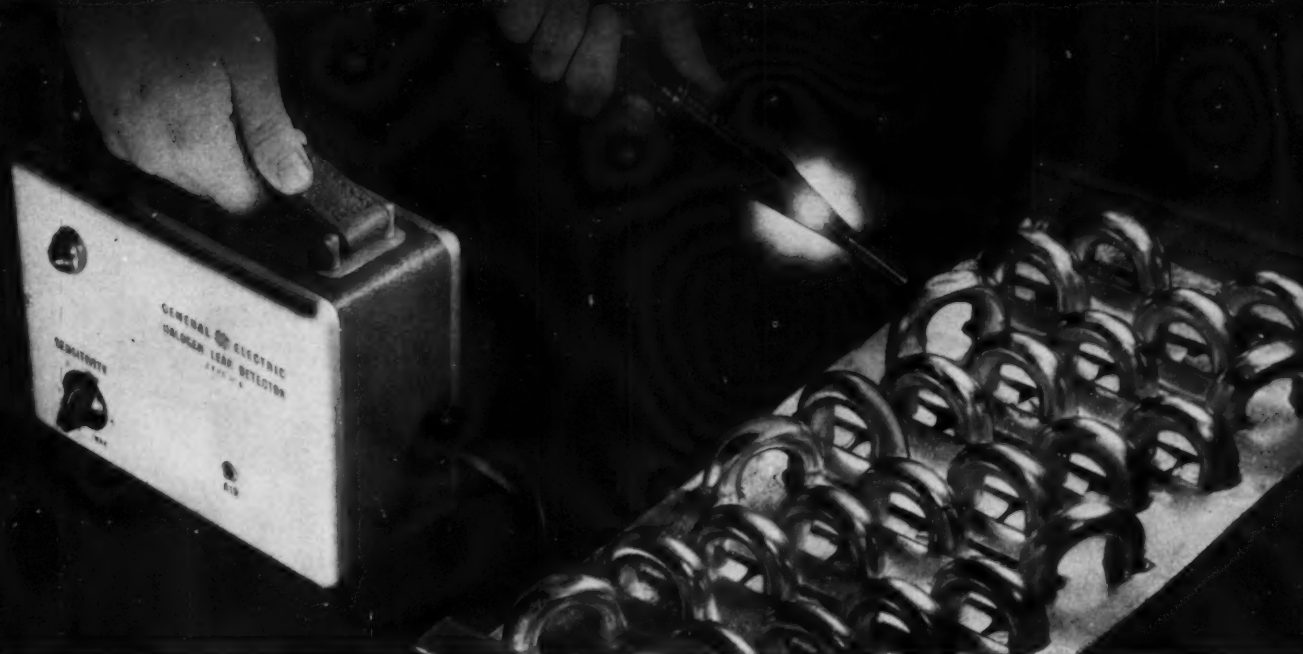
... your guarantee of
**PURITY,
DRYNESS,
CORRECT WEIGHT**

ISOTRON Accurate Weight

ISOTRON
THE KEY TO MODERN LIVING


**Pennsalt
Chemicals**
ESTABLISHED 1850

NEW leak detector for air conditioning and refrigeration servicemen



GENERAL ELECTRIC H-6 LEAK DETECTOR

Locates Leaks in a flash!

Now General Electric offers a new, low-cost, electronic leak detector that is sensitive, easy to use, and permits positive location of leaks in systems that contain Refrigerant gases such as Freon, Genetron, and Isotron. Designated the Type H-6, this leak detector utilizes a unique probe that actually lights up the moment it passes near a leak.

Designed especially for air conditioning and refrigeration servicemen, the portable H-6 is lightweight and features a wide range of sensitivity selection through the use of a single control dial. In addition, an automatic balance feature helps in locating leaks even when room air is contaminated with Refrigerants.

The easy-to-use H-6 leak detector is ready for operation 60 seconds

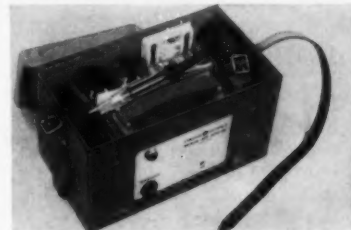
after it is turned on. To test for leaks, you simply move the probe along seams or around joints. When the tip passes near a leak, the probe flashes. After locating a leak, the detector recovers in less than two seconds.

The faster, more reliable leak detection afforded by the H-6 can easily mean more service calls per day, greater customer satisfaction, and greater profits to you.

See and operate the new H-6 leak detector now on display at leading refrigeration supply houses throughout the country. You can also get more information by contacting your G-E Apparatus Sales Office or by writing for bulletin GEA-6827. General Electric Co., Section 585-78, Schenectady, N. Y.



Operating instructions plus helpful servicing hints are imprinted on the back of the leak detector control unit.

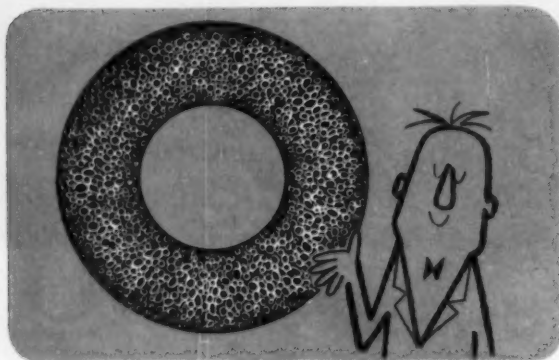


Attractive leather case is available and provides a convenient means of carrying equipment and accessories. The detector unit can remain in the case, even when in use.

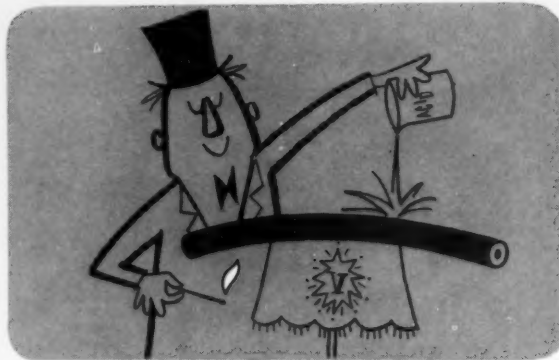
Progress Is Our Most Important Product

GENERAL  ELECTRIC

New pipe insulation ends condensation problems...cuts labor costs sharply... preformed **VASCOCEL®** TUBING AND PIPE INSULATION



The new, fast way to stop dripping pipes! The closed-cell structure of Vasco-Cel insulation makes condensation impossible. It also gives practical thermal insulation at temperatures as high as 220°F.



Vasco-Cel insulation gives extra safety, too. Made from self-extinguishing material that will not feed a fire—cannot carry flames along pipes from room to room. It is resistant to acids, oil and fungus.



Soft—so flexible you can tie it in knots—durable, clean and odorless—Vasco-Cel is ideal insulating material. Slips on easily over tube or pipe or can be slit lengthwise and fitted onto pipe already connected. Cement it together permanently with Vasco-Cel Adhesive. ID's from $\frac{3}{8}$ to $3\frac{1}{2}$ in. Fabricated in 6-ft. lengths.



Vasco-Cel is the newest in a complete line of insulation products for refrigeration. Get Vasco-Cel, Permagem Slugs & Cords, and Presstite Tape from your nearest "Virginia" wholesaler. For complete information, write Refrigeration Division, VIRGINIA SMELTING COMPANY, 294 Jefferson St., West Norfolk, Va.

ESOTOOL • V-METH-L • CAN-O-GAS • VASCO-CEL • PERMAGUM • PRESSTITE TAPE • KWIWRAP • SUNISO REFRIG-
ERATION OILS • WATER TREATMENT CHEMICALS • SALES AGENT & REPACKER FOR DU PONT'S "FREON" REFRIGERANTS

Available in Canada and many other countries



Circle No. 32 on Reader Service Card

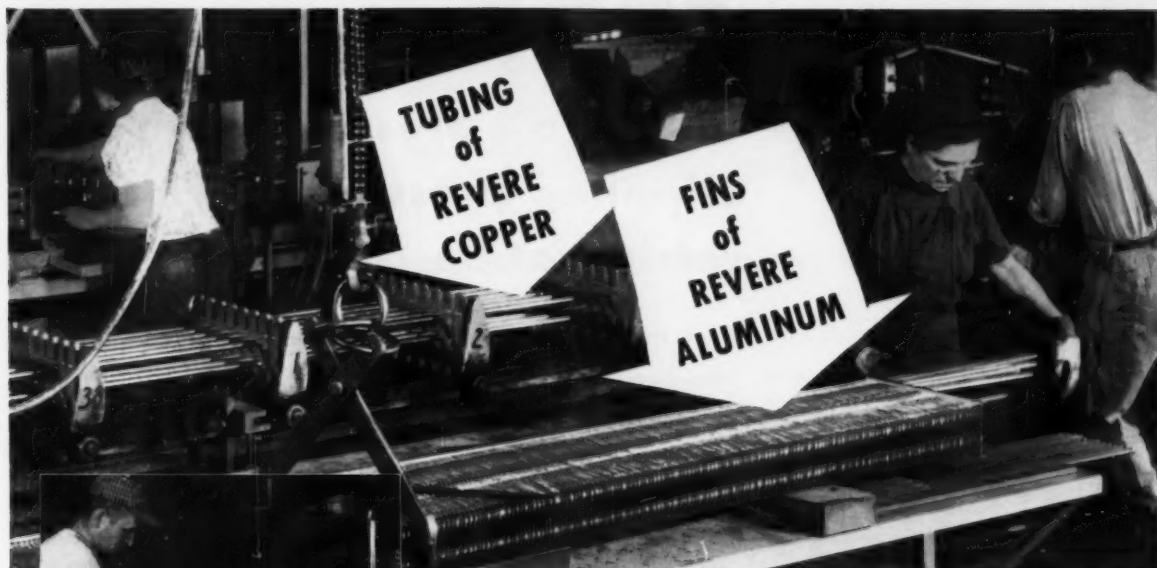
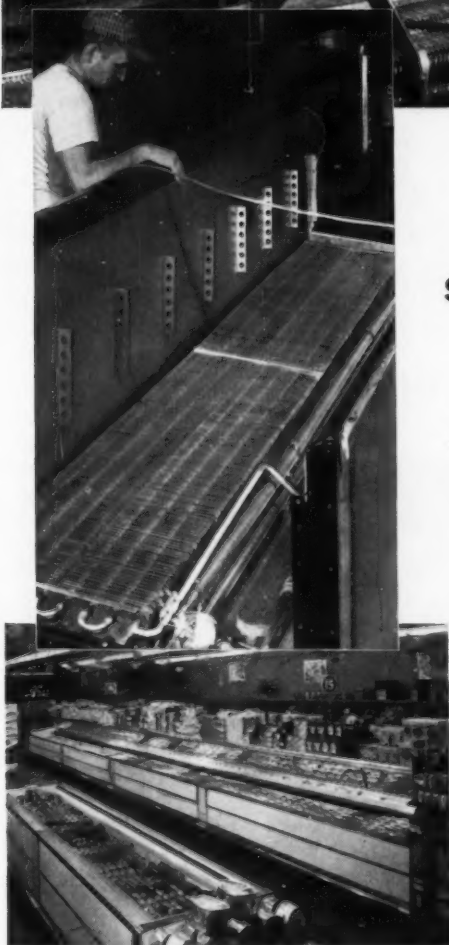


PHOTO ABOVE shows one of the Tyler cooling units, made of Revere Copper Tubing and fins of Revere Aluminum, in the final stages of assembly.



MIDDLE PHOTO shows completed condensing unit in place in one of the Tyler Refrigerated Sales Cases. Revere also supplies aluminum sheet in plain and embossed finish for miscellaneous cabinet trim and structures.

BOTTOM PHOTO SHOWS one of the newest Tyler Sales Cases installed in a modern super-market. Tyler, a pioneer of important improvements in this type of equipment, makes units for every type of perishable food and for every store need.

A combination that produces superior commercial refrigerators for TYLER customers –

fresher, more palatable foods for your table

Because of its distinct, money-saving advantages the combining of aluminum fins with copper tubing has been rapidly growing. But this very combination also calls for care in assembly as well as care in the manufacture of the aluminum sheet and copper tube.

That's why Tyler Refrigeration Corporation, Niles, Michigan, tells us they use Revere Aluminum Sheet and Revere Copper Tubing in fabricating coils for their Commercial Refrigerated Sales Cases.

For, in addition to the uniform wall thickness and close, even grain structure which permits bending without distortion, Revere Copper Tubing is readily brazed or soldered, thus making it easy to put on return bends. And, since copper expands so readily it assures a tight fit with the aluminum fins.

Add to this, the accuracy of gauge of the Revere Aluminum Sheet and its lightness, plus the conductivity properties, the non-rusting qualities and ease of fabrication of both copper and aluminum and you have an efficient, economically operating cooling unit.

In on the ground floor, Revere, because of its many years of intimate knowledge of both copper and aluminum is qualified to assist manufacturers of refrigeration, air conditioning and heating equipment in their development, with gratifying results.

Why don't you take advantage of this accumulated knowledge and consult with Revere's Technical Advisory Service on *your* problems?

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue
New York 17, N. Y.

Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.



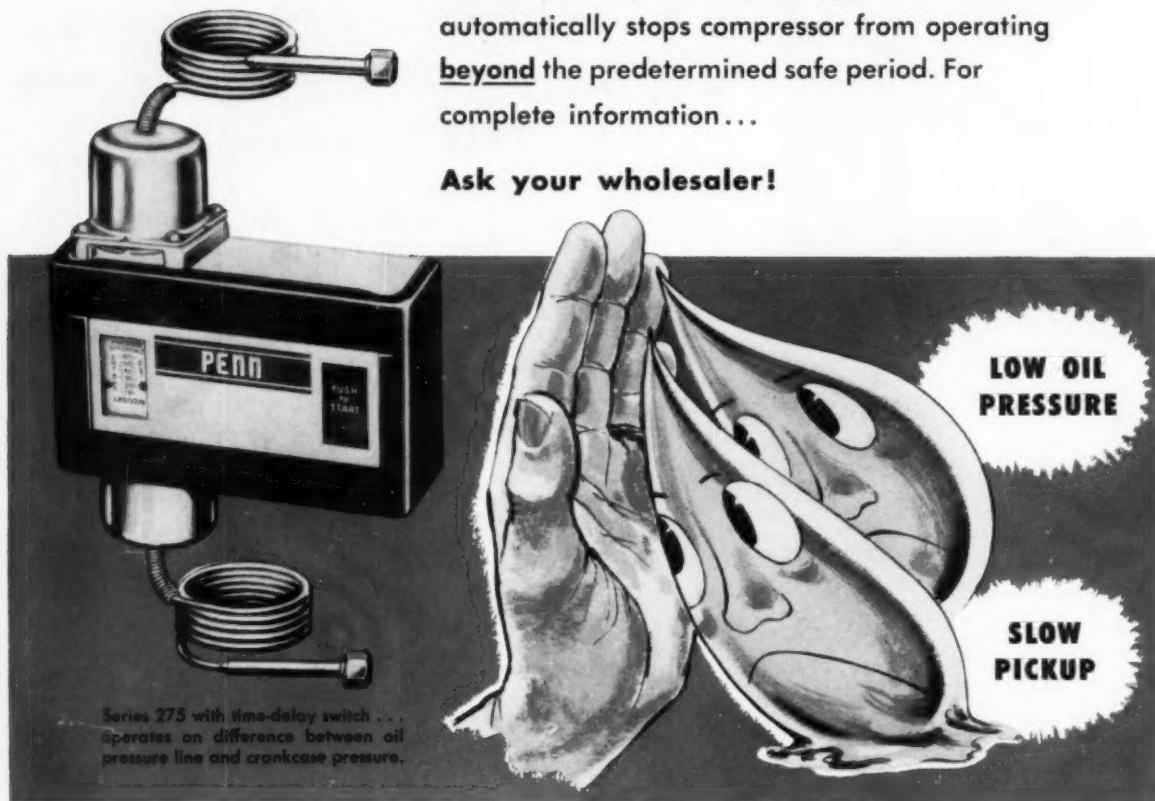
Circle No. 33 on Reader Service Card

STOP slow pickup or low oil pressure from crippling pressure-lubricated refrigeration compressors!

Even the best refrigeration compressors can be attacked by the "destructive pair" ... slow pickup of oil pressure at the start of a cycle or low oil pressure during the running cycle. When it occurs ... seals and bearings are in danger!

To prevent such damage and loss of operating time, install the Penn 275 control. Then, any time subnormal oil pressure develops, this control automatically stops compressor from operating beyond the predetermined safe period. For complete information ...

Ask your wholesaler!



PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Circle No. 34 on Reader Service Card

Insurance and the Warranty Problem

BACK in September, this magazine took a stand in opposition to the 5-year warranty. It is our feeling that this warranty in its confusing state is not good for the user, the dealer-contractor, the wholesaler or, the manufacturer.

Letters and comments we have received indicate that this opinion is shared by a large majority of the people in this business. Some manufacturers already have made changes in their warranty program. Others plan to do so.

But we have received a few letters that question the advisability of eliminating the 5-year warranty. The feeling of these writers was that the user of equipment would be subject to high repair bills if he had to replace a compressor or a sealed chassis. One writer said, "The warranty is like insurance to the customer. And since customers are more and more insurance-conscious can we, as an industry, afford not to offer such insurance?"

A representative of one insurance company has outlined to me an idea that I should like to pass on to you for your reaction.

Under this plan, a manufacturer would make his product available with a 1-year guarantee against manufacturing defects from date of installation.

Then an insurance company could make available to the dealer-contractor a policy that he could sell to his customer. This policy could be for one year, two years, five years or for any length of time. Costs naturally would be based upon the size of equipment and duration of the policy, which could cover the compressor only or the complete chassis.

In this way, the customer would know that the price he was paying was for future protection and that it was completely independent of the cost of the installation. The policy would outline completely the coverage provided, and how much would be paid in case of failure.

Under such a plan, if the customer were to have a failure he would call any dealer-contractor of his choice. Repairs would be made, and the dealer-contractor would bill the customer for his services. The customer then would file claim against the insurance company, receive payment in line with his policy, and in turn pay the organization that had provided the service.

All service and replacement parts would be negotiated between the dealer-contractor and the customer. The customer would know what insurance coverage he had, and the dealer-contractor would be able to obtain a legitimate profit on service. Wholesaler and manufacturer also would make a fair profit.

Most important, such a plan would put insurance costs and procedures where they legitimately belong—in the hands of insurance companies dealing directly with the persons paying for the insurance. If the insurance company should refuse for any reason to honor a claim it would give them a bad name, not the dealer-contractor or manufacturer.

To me this idea sounds good. It would give the dealer-contractor complete control over his negotiations with his customer—and this is right—but it would take him off the hook on the problem of extended warranties.

What's your reaction?

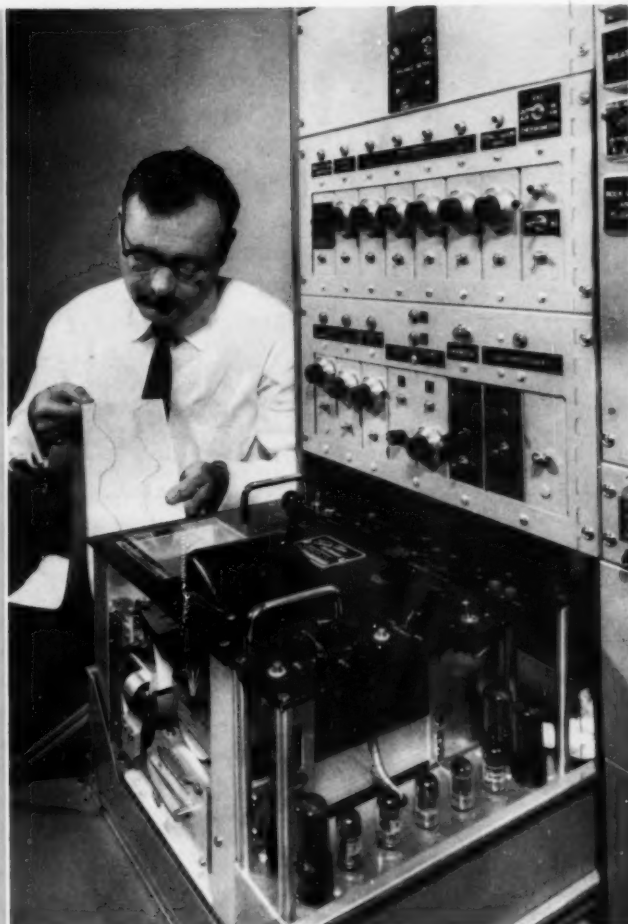
Thom Muir

EDITOR'S NOTE: Just a year ago we published in this magazine an article titled "Something's Wrong with the Figures." This article made it plain that even the manufacturers of residential air-conditioning equipment can't agree on how much cooling is required for any particular house.

On the basis of the same set of house plans, and the identical supplementary information, seven major manufacturers came up with cooling load calculations varying all the way from 23,000 to 35,178 Btu/hr. The size of cooling equipment recommended varied accordingly.

These figures bore out the same discrepancies revealed earlier by this magazine in air-conditioning proposals solicited from dealers of these same manufacturers in one major metropolitan area. (For details see the prize-winning article "I Tried To Buy Year-Round Air-conditioning" in the November 1957 issue.)

Now one manufacturer has come up with a dramatic new approach to the problem of calculating residential cooling loads that not only makes this job quicker, easier, and more accurate, but also expresses the result in terms the customer can understand. For the full story of this development, and what it can mean to residential air-conditioning dealers and salesmen, read the article on these pages.



WARAC'S OUTPUT is a continuous chart showing temperatures maintained in a specific house by a specific air-conditioner.

This is **WARAC** *... will it eliminate Btu's, tons, and horsepower in cooling load calculations?*

by Jim McCallum, editor

TALK TO THE AVERAGE HOMEOWNER in terms of Btu's, and what does it mean to him?

Nothing!

Try to explain to him how big an air-conditioner he needs in terms of horsepower or tons of cooling capacity and you don't accomplish much more.

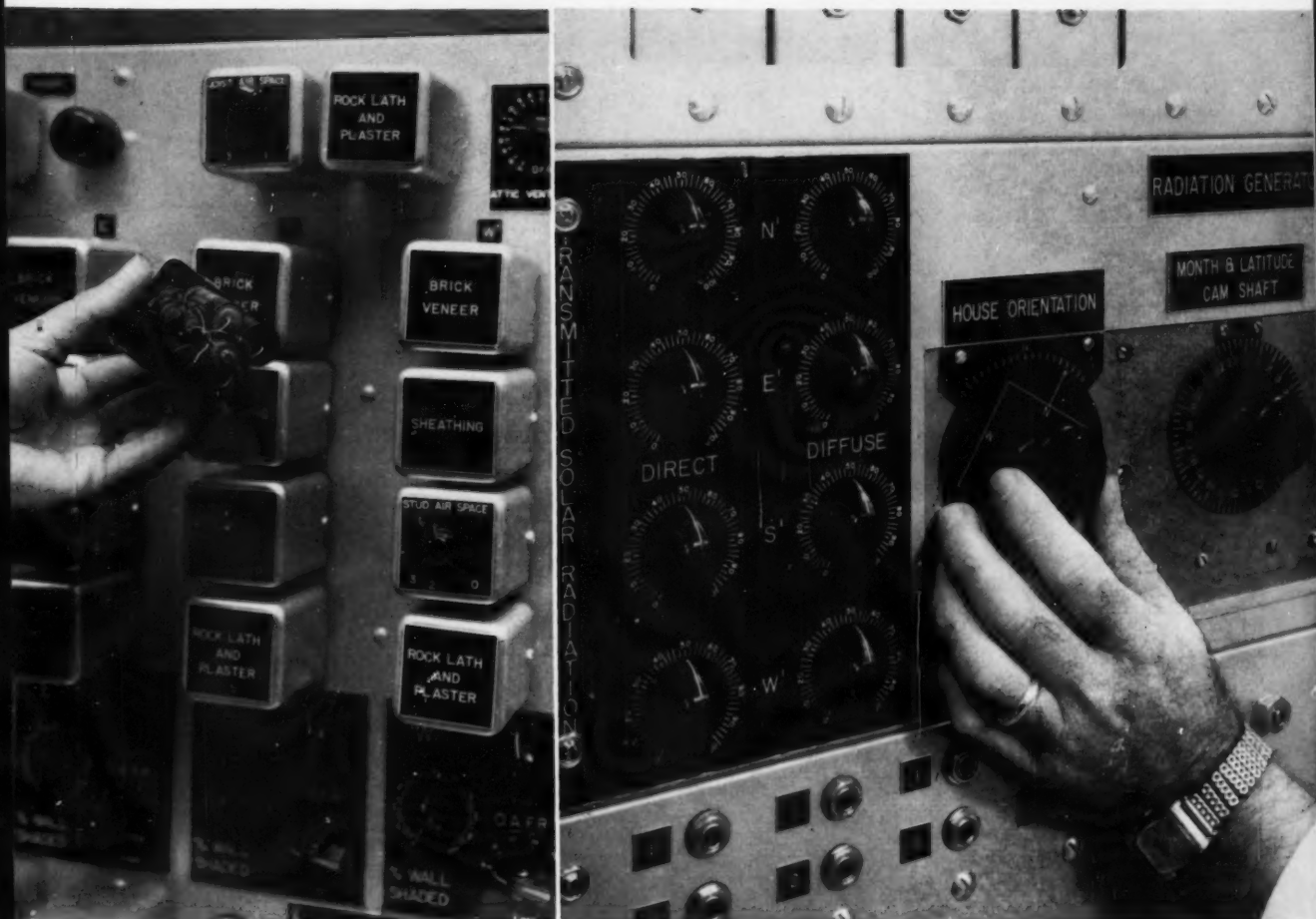
But he can look at a thermometer and tell you right off whether he's comfortable or not.

So if you could actually show him what temperatures any specific size of air-conditioner would maintain in his home hour-by-hour throughout the day, under any particular set of conditions, you'd really be getting your sales message across to him in a language he could understand.

That's just what Warac makes possible.

Warac is a simple handle for a mighty impressive piece of machinery — the Westinghouse Analog Recording Air-conditioning Computer.

This complex electronic apparatus was designed and



CONSTRUCTION FEATURES of the house to be analyzed are set into computer by electronic controls in the analog section.

HEAT LOAD of the house is built up through electrical signals in the generator section. Each wall is figured separately.

developed in the Westinghouse new products engineering laboratories at the request of the company's air-conditioning division. It represents a new approach to an old industry problem — how to determine and properly specify how much air-conditioning is required in a particular house at a particular location.

Warac is designed to consider systematically over 50 factors which influence the indoor temperature of a house. The information related to these factors is programmed into the machine through sets of dials and switches. Given the proper data the computer can produce in 24 seconds a continuous visual record of both the indoor and outdoor temperatures over a 24-hour period for the home being analyzed. It also provides a record of running time for the equipment selected.

How large an air-conditioning unit is required by a 7-room ranch house, facing northwest, and shaded by a grove of oak trees? Warac will come up with the answer just 24 seconds after all of the pertinent infor-

mation concerning location, time of year, type of construction, amount and nature of surface area, wind velocity, ventilation loads, average occupancy, and other variables have been fed into the machine.

What's more, Warac will show equally quickly what differences in indoor temperature and running time will result if any of these variables are changed, or if an air-conditioning unit of different capacity is installed. This will help make it possible to sell a customer more accurately sized equipment with the confidence that the air-conditioning unit installed will maintain the temperature conditions desired.

Equally important, it will make it possible to give the prospect a choice of model sizes with full knowledge of what temperature conditions each size will produce. Then he can make an intelligent decision as to whether he wants to pay for the size of unit recommended to maintain optimum conditions, or whether he's willing to settle for something less than optimum conditions

that can be provided by a smaller unit which will cost him less money.

While the computer is primarily designed for residential use it also can be adapted to light commercial applications. And engineers point out that there's no reason why a similar unit couldn't be developed for load calculations on large commercial and industrial buildings.

First use to which Westinghouse is applying Warac's amazing capabilities is in connection with a correspondence training course in application engineering that is being conducted as part of the company's merchandising program for 1959. Students will be asked to figure typical residential loads by use of conventional forms. These same house plans then will be analyzed on the computer for comparative accuracy, estimate of temperatures anticipated, running time, and similar measures of performance for the equipment specified.

Second step in the use of Warac will be to provide Westinghouse distributors with sample temperature and running time tapes of certain general types of houses air-conditioned with specific models of the company's equipment. Distributors will be able to show these actual tapes to prospects and tell them "here is what this model will do in a home like yours."

Westinghouse also plans to make good use of the computer in selling air-conditioning equipment to builders of major housing projects. In such projects homes usually are basically similar in construction, but vary in design, size, and orientation. These factors, of course, directly influence the size of air-conditioning equipment that should be selected for each home. Fed these variables, Warac will spew out the answers quickly and accurately.

Because of the speed and versatility of its calculations, Westinghouse engineers expect the computer to prove a valuable aid in planning future air-conditioning product lines.

The company's sales executives hope that by taking some of the mystery out of air-conditioning load calculations Warac will help them build a stronger dealer organization. They feel that many good potential dealers from the heating or sheet metal side of the business are reluctant to get into cooling because they're afraid of the technical problems involved. Availability of the computer, they believe, should help correct this situation.

While at present the development of Warac has not progressed to the stage which would make it economically feasible for calculating air-conditioning requirements for individual homeowners, the potential for such use certainly exists.

What's more, Westinghouse plans to make the facilities of the computer available, upon request, to various industry associations to assist them in any research or test programs they may conduct. In this way, by building and checking test houses electronically, Warac will prove of direct benefit not only to

Westinghouse but also to the air-conditioning industry as a whole.

The principle behind Warac's operation is that voltage represents temperature, and current is equated to the flow or transfer of heat. Capacitors serve to denote the storage of heat energy, and resistors are comparable to thermal resistance.

Four basic components make up the computer: the generator section, analog section, amplifier section, and the recorder.

In the generator section, a knob is preset to indicate the effect of the sun's rays upon the house. In order to provide the computer with this information, the time of year and latitude of the location must be known. Another dial is used to set the direction in which the house faces. A control for outdoor air temperature also is included.

In the analog section, factors taken into consideration include the type of window, wall, floor, ceiling, and roof construction. Other variables accounted for include amount and type of insulation, degree of shading on exterior walls, wind velocity, ventilation loads, average occupancy, and heat generated by cooking.

The amplifier section contains controls for setting up the exact area in square feet of walls, floor, ceiling and glass. Here also is a dial for indicating the desired indoor temperature.

Once all of these adjustments have been made, the operator selects an air-conditioning unit in terms of cooling capacity up to 110,000 Btu's. Then he sets a switch for either air cooled or water cooled unit ratings. Finally he simply pushes a button to set the computer into operation.

In 24 seconds Warac's recorder feeds out a strip of paper tape containing a chart with a record of the actual outdoor and indoor temperatures over a 24-hour period for the house under consideration. This tape indicates exactly how any specific air-conditioning unit will perform in cooling the home. By varying the factors which have been set on any of the dials or controls the tape will continue to record both temperature and running time of the equipment selected under the altered conditions.

Accuracy of the computer has been thoroughly checked against results achieved in actual test homes.

Using one such home, several tapes have been run off selecting cooling units of different size, changing the orientation of the house, adding or subtracting insulation, imposing abnormal loads of people, and altering other variables in order to demonstrate the computer's ability to properly evaluate all these changes.

As a further test, Westinghouse selected several typical residences in different parts of the country and instrumented them with continuous 8-point temperature recorders. Results were checked all last summer and substantiated the computer's findings.

This demonstrates again that it is not only the accuracy but the speed of the computer that make it such a valuable tool. Evaluations like those obtained in the test homes take months to accumulate on recording thermometers. Warac does it in seconds.

send today!

Free from NIBCO



This free catalog for 1959 illustrates and gives complete specifications of NIBCO low pressure, pressure rated and special type bronze valves . . . including the sensational new Y-Pattern Globe and Check Valves. These are the valves that give you more shut-offs per dollar . . . fully guaranteed to operate perfectly. See your wholesaler or send coupon below.

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☐ Also send address of nearest source of supply.



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for a supply of cylinder return
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Receiving Point

Birmingham, Ala.	Birmingham, Ala.
Los Angeles, Cal.	Los Angeles, Cal.
San Francisco, Cal.	San Francisco, Cal.
Denver, Colorado	Denver, Colorado
Bridgeport, Conn.	Bridgeport, Conn.
Chicago, Ill.	Chicago, Ill.
Danville, Ill.	Chicago, Ill.
River Rouge, Mich.	River Rouge, Mich.
Minneapolis, Minn.	Minneapolis, Minn.
E. St. Louis, Ill.	St. Louis, Mo.
Albany, N. Y.	Albany, N. Y.
Buffalo, N. Y.	Buffalo, N. Y.
Laurel Hill, Maspeth, N. Y.	New York, N. Y.
Passaic, N. J.	New York, N. Y.
Charlotte, N. C.	Charlotte, N. C.
East Point, Ga.	Charlotte, N. C.
Jacksonville, Fla.	Charlotte, N. C.
Cleveland, Ohio	Cleveland, Ohio
Baltimore, Md.	Philadelphia, Pa.
Camden, N. J.	Philadelphia, Pa.
Pittsburgh, Pa.	Pittsburgh, Pa.
Providence, R. I.	Providence, R. I.
Baton Rouge, La.	Houston, Texas
Houston, Texas	Houston, Texas
Vancouver, Wash.	Seattle, Wash.
Milwaukee, Wis.	Milwaukee, Wis.

* Sales Office



GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

LOADED and ready to start for the job is this utility truck owned by Lehigh Air Conditioning Co. It will carry three men plus all equipment and supplies needed for an installation.



Job-Planned Trucks Save Time and Money

A GOOD TRUCK is one of the most important tools any air-conditioning or refrigeration contractor can have. The better suited this truck is to the contractor's particular needs, the more time and money it will save him.

These facts are highlighted by the recent experience of Lehigh Air Conditioning Corp.

This Allentown, Pa., contractor has been operating for 27 years in a wide area that not only covers the well known Pennsylvania Dutch section of the state but also extends as far as Philadelphia and New York City. As a matter of fact, the majority of the firm's work is done outside Allentown.

This means that the expense of transporting men and equipment to and from the job can easily put a big bulge in the company's job costs.

On these out-of-town jobs, F. J. Hardner, president of the Lehigh firm, generally found it necessary to send out both a pick-up truck to haul the air-conditioning equipment and a panel truck to carry installation material and ladders. This tied up two of the company's six trucks.

Hardner realized that this was not an economical arrangement, so he started looking for a single vehicle that would be capable of carrying all equipment and supplies, plus the three men usually sent out on each job. A couple of years ago he found his answer in a standard utility body made by Reading Body Works.

One-Load Truck Pays Off

With this body mounted on a standard $\frac{3}{4}$ -ton chassis, he finds that he can now send out just one truck on each job and still have all the equipment, materials, and manpower necessary to handle the complete installation. With truck operating costs as high as they are, this saves considerably on job costs and increases the company's profit margin.

Especially designed for air-conditioning work, the sides of this body are lined with 14"-deep covered compartments fitted with bins, trays, drawers, and shelves for storage of parts, tools, and installation materials and equipment. Some shelves are adjustable and removable so that the arrangement

can be altered to meet daily job-to-job needs.

All equipment can be loaded on the truck bed, which is 50" wide rather than the normal 48". Heavy-duty safety tread deck plating protects the truck bed from wear.

The only accessory Lehigh added to this standard body was an overhead ladder rack. To provide secure footing while handling the ladders or equipment, rubber matting covers the catwalk atop the cabinets on each side of the truck body.

The doors covering these compartments are especially die-formed to make them weathertight. They are equipped with recessed slam-action cylinder locks. This makes it easy for the men to close them, even with their hands full, and thus prevents theft of materials or supplies when the truck is left unattended.

In addition to the savings on truck operating costs, Hardner has found that use of the utility body has cut on-the-job time by making it easy for workmen to quickly locate the tools or parts they want

Continued on page 76



154 JETS mounted in the ceiling distribute cold air evenly throughout the cold storage room where grapes are stacked for shipment. Temperature of the room is held at 31 F, 92% humidity.

DON'T SELL HALF A JOB

... just because the customer asks for it

*This contractor countered
his customer's proposal
for a part-way cooling system
by submitting specifications
for a complete job.
By backing up his recommendation
with plenty of facts and figures
he proved his point
and got the contract.*

by Scholer Bangs, western editor

THE CUSTOMER IS NOT ALWAYS RIGHT. So if he asks for half a job don't hesitate to try and sell a complete installation. That's what happened when Di Giorgio Fruit Corp. of California asked for proposals on mechanically refrigerating ten precooling rooms and three cold storage rooms in its huge new plant.

The 490 x 140' plant is used primarily for processing grapes. Each precooling room will hold 2½ carloads of packed grapes. The storage rooms have a total capacity of 115 carloads.

Main purpose of the mechanical refrigeration system was to reduce time of handling and precooling, thereby delivering the fruit to the consumer in the best possible condition.

In tackling this job Vincent Gessel of Temperature Engineering Co., Alhambra, Calif., refused to think in terms of half a sale. So he countered with a proposal to air-condition the entire plant with nearly 2,000,000 cu.ft. of moistened and chilled air.

Gessel felt that the plant warranted complete cooling since it has a relatively high use rate of up to 100 days of grape packing, plus shorter periods for other fruits. The equipment is operated an additional six months in storing late grapes. This keeps the circuit serving the cold storage rooms active at least nine months of the year.



LOW PRESSURE 45 F AIR reduces temperature of grapes as they move past packing stations. Heat from grapes is distributed throughout the plant to maintain 70 F temperatures.



WOOD PALLETS ARE SPRAYED to increase humidity content of wood. Dry pallets or shipping cases would rob the grapes of much of their moisture and cause considerable shrinkage.

Determined to sell a complete installation, Gessel started doing some research. He worked with scientists from the University of California in compiling information on grape industry economics, agricultural methods, and cost-profit estimates. By means of these studies he was able to prove to Di Giorgio that every hour saved in bringing the picked grape to pre-cool temperature adds one full day to its shelf life, and that a jet cascade system of air distribution was essential to attain the desired results.

Thus, by thoroughly studying his customer's problems and helping to solve them, Gessel was able to point out enough direct and indirect benefits to convince Di Giorgio that he really needed a complete cooling job. To strengthen his case, Gessel pledged follow-up service that would assure proper performance of the system.

He landed the contract and installed a \$150,000 system that concentrates in a single equipment room four 75-ton brine chillers; one 300-ton, 4-circuit evaporative condenser; and 18 centrifugal pumps that can circulate brine at 8000 gpm. Fourteen heavy-duty backward-curve blowers circulate 250,000 cfm of chilled air. A humidifying system emits 6000 lbs. of water a day into the air through mist-spray heads.

Tapered equal-friction sheet metal conduits carry refrigerated air at ceiling height through the packing area, pre-cool and storage rooms.

Hundreds of nozzles, throated from 8" receiving diameter to 6" exhaust diameter, tap the conduits and send low-pressure columns of cold air cascading to the floor. Each jet is accurately aimed at an engineered target area.

In pre-cool and storage rooms this air pours down between stacks of cases, fills the sealed rooms, and penetrates to the fruit in a matter of minutes. In the packing room the jets are positioned directly above conveyor lines along which boxes of freshly-picked grapes move.

To take full advantage of the air-conditioning system, Di Giorgio Fruit Corp. changed its packing methods. As a result, grapes reach distant markets in top condition and gain up to three days shelf life.

Previously a truck might have been in the field for two hours, gathering a full load. Now field trucks shuttle to and from the plant partly loaded with grapes that have been off the vine less than an hour before they enter the cooled plant.

The receiving dock is inside the building. Grapes are no longer stacked outside, subjected to high ambient temperatures. Palletized field boxes go directly into the 70-75 F packing room to begin cooling.

In less than an hour after they enter the plant the grapes have cooled to within a few degrees of room ambient temperature, and they are graded, boxed, and on their way into the pre-cool rooms.

The moment a box of grapes goes upon a receiving conveyor it is bathed in 45 F air that reduces its pulp temperature, which may be 95 F or higher, by 25 to 30 F. As the cold air picks up heat from the grapes, it mixes with room air and maintains an over-all temperature of 70 F.

At the end of a day of heavy packing this reading may rise to 75 F. This increase is created by body heat radiation of more than 300 workers, and by losses through the large receiving dock doors opened to accept fresh fruit from the field.

Grapes are held 16 hours in the precool rooms, and brought to a temperature of 38 F. From pre-cool the grapes move into refrigerated trucks, or into the storage rooms where they are held in a 32 F atmosphere.

Electronic controls govern water spray systems and maintains three levels of humidity; 70% in the packing room; 92% in storage rooms, and up to 98% in pre-cool rooms. This humidity control, combined with early cooling, is largely responsible for reducing grape shrinkage from 7 to 1%.

Another important aid to reducing shrinkage is a controlled water spray of all cases and pallets before packing. Experiments established that the wood in shipping cases had a 7 to 10% moisture content. The wood was inclined to stabilize at a moisture content of 35%, which it would attain by robbing packed grapes of part of their 85% moisture. Spraying the cases before packing prevents this.

WINTER WORK

PLEASE NOTE: Following work needs to be done on your cooling equipment before next spring. To be done during winter when usage is at minimum and we have the most free time.

Name National Retail Hardware Address 964 N. Penn St.
 Date 9-9-58 Date best to do work Winter
 Equipment Trane 15 ton a/c unit Work to be done Pull compressor down. Check rods and bearings for noise and wear.

Serviceman Everett Wilson Customer's Sig. OK by Don Dunn
 Remarks Don thinks the bearings are about to go out.

THE SCHILLING CHILLING CO., INC.

Form 114 P. KC. Ser. 5-54

COMPLETED ORDER form gives Schilling authority to service customer's equipment during the winter months.

WINTER WORK ORDERS

help keep this contractor's servicemen busy the year around

ONE MAJOR CONCERN of most air-conditioning service organizations is how to keep their mechanics busy after the peak season ends. The volume of service calls falls off sharply once the hot months have rolled by. If some plan isn't devised to prepare for the slower work months, the management usually must resort to staff cuts, shorter work weeks, or some similar action in order to pare overhead.

John Schilling of Schilling Chilling Co., Inc., Indianapolis, Ind., has successfully solved this problem by launching a special winter work program every fall. To make this program go, each serviceman solicits customers in an effort to sell them on the idea of having any needed service work on their equipment handled during the winter months.

A cash bonus is paid to the servicemen for each such order obtained. Also, a contest has been added to give the men even more

of an incentive to go after this winter service business.

This program is timed to coincide with the annual fall pump-down period for air-conditioning equipment, generally running from September through November. The Schilling firm keeps a chart of all its air-conditioning customers. The service manager refers to this chart for the exact date these customers are to have their cooling systems pumped down for the non-usage period. Then he tells the men when and where to make these calls.

The serviceman's approach to the customer is simply to point out any work that may be needed on the equipment, and to urge that the customer arrange to have this work done before start-up time next spring.

He explains that the firm can assure top quality workmanship during the winter months when the men are not crowded for time. He sums up his sales pitch by

pointing out that the work will have to be done eventually, so it makes more sense to have it done during the slow season under the best possible conditions.

On these calls the servicemen take along a special order form. When properly filled out, this form authorizes Schilling to service the customer's equipment sometime during the months of January through March.

The serviceman dates the form and writes down the customer's name, address, type of equipment to be serviced, and a tentative date for the work to be done. He then puts down a brief description of what work will be needed.

Both the serviceman and the customer sign the form to make the agreement valid. There also is a space at the bottom of the form for any additional remarks that may affect the job.

The form is made out in duplicate so that a copy may be given to the customer if he wants it. The

original is brought back to the office to be filed under the customer's name.

After the pump-down period, the service manager checks the file to see what winter jobs are scheduled and when. He then calls the customer to reconfirm the earlier agreement. This protects the firm against the possibility that a customer may change his mind and decide that he would rather wait until the usage season before he gets his equipment serviced. Fortunately, this happens only about 5% of the time, Schilling reports.

Customer Sent Invoice

The customer is sent one of Schilling's regular service invoices after the winter service job has been performed.

Psychologically, Schilling, points out, the pump-down period is the best time to solicit orders for winter work. Experience has proven that if customers are approached during the time when their units are in operation, they may become frightened into thinking that the equipment should be serviced immediately. This obviously would make the service load problem of the rush season worse instead of better.

Contest Spurs Orders

This year Schilling decided to hold the contest to make his servicemen even more aware of the benefits of jobs during the winter. The men were divided into three groups. The group securing the most orders for winter jobs, before January, will be wined and dined at Schilling's expense. The prize evening will include wives of the servicemen.

Each team has a captain who keeps score and encourages the men to get the orders. A running tally sheet is kept so each man can note his team's progress.

The contest started near the end of the peak season. Within the first month the men had lined up 41 winter service jobs. Schilling figures that this is a very good batting average indeed.

What about Aptitude Tests?

They won't solve all your sales hiring problems

MUCH HAS BEEN WRITTEN lately about the value of subjecting prospective salesmen to some sort of aptitude test before hiring them. A number of companies provide such testing services. As a result, some businessmen have come to look upon such tests as a panacea for their personnel problems: hire only men who score high grades on these tests and you'll have a top-notch sales force.

Many experts warn, however, that this is a dangerous oversimplification of the case. One such expert is "Chuck" L. Lapp, professor of marketing at Washington University in St. Louis, Mo., and a sales management consultant. While Lapp is an ardent advocate of pre-testing as a means of screening sales applicants and points out that such a program can definitely improve a dealer or distributor's hiring practices, he warns that these tests do have certain limitations and there are some things they simply can't be expected to accomplish.

Here is a list of do's and don'ts for testing:

DO:

Experiment continually with testing, and analyze results.

Test the test on present salesmen of known performance.

Appreciate that too high a score may be as indicative as a very low score.

Follow-up test with a clinical interview by a capable psychologist.

Determine how much or how little of a quality or characteristic is needed by a salesman.

Obtain the full cooperation of an applicant before giving tests.

Custom-make any test for your industry, company, and sales job.

Watch for the test-wise applicant.

DON'T:

Don't look on testing as the sole means of selecting or rejecting a candidate.

Don't try to determine or deduce from a test certain characteristics that can be determined better by some other means of selection such as the interview, review of application blank, reference checks, character and credit history report, or medical examination.

Don't assume that because a test is discriminating for one type of salesman it will be for other types of salesmen.

Don't depend on a test as being 100% valid.

Don't expect tests to be as valid and reliable on older and experienced applicants as they are on younger, inexperienced applicants.

Don't give tests for hiring and then fail to use the results to give direction in supervising salesmen.

Don't expect a test to measure "will do" characteristics.

Don't give up on tests, but keep on testing until you find a test that is indicative of the characteristic you are attempting to evaluate.

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25 YEARS of PEAK PERFORMANCE



and no wonder... for Sporlan "G" Valves still retain many of the basic design features introduced in 1934, have incorporated many new engineering features and have won greater acceptance, year after year.

And we're proud of the SPORLAN SELECTIVE CHARGES too...for after 25 years, what was originally a Sporlan Engineering innovation has now been adopted universally throughout the entire thermostatic valve industry.

SPORLAN "C" CHARGE

for suction temperatures ABOVE ZERO

SPORLAN "Z" CHARGE

for suction temperatures BELOW ZERO

SPORLAN "X" CHARGE

for extremely low temperatures

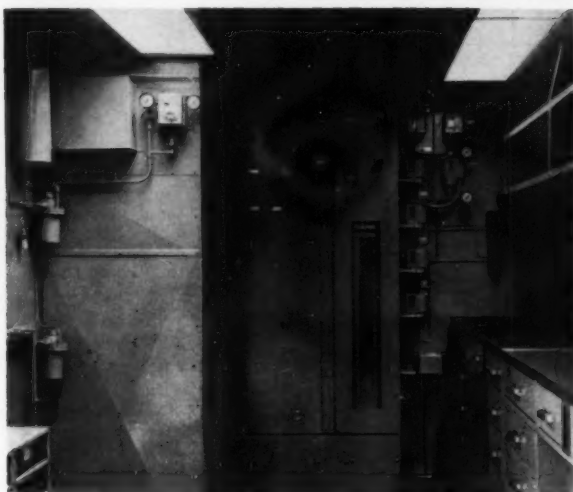
Yes... Sporlan points with pride to **25...**
for only Sporlan "G" Valves with Selective Charges can give you Peak Performance on all refrigeration applications!

Your Sporlan wholesaler has the latest literature. Ask for it when you order your next "G" valves...and be sure to order Sporlan Catch-Alls, See-Alls and Solenoids along with them and get Peak Performance Right Down the Line!

SPORLAN
TV
VALVE COMPANY

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Export Dept. • 85 Broad Street • New York 4, N. Y.



A LOT OF EQUIPMENT in a little space was one of the primary requirements for the specially designed conditioning system in these airborne flight control centers. Interior view shows the equipment enclosure and controls. Photo above shows trailers in use at a Navy flying field.

All-Weather Conditioning for Electronic Trailers

... that's what the Navy ordered and this contractor provided

DESIGN A SYSTEM that will maintain a comfortable atmosphere in a portable aircraft control center jam-packed with electronic equipment, whether this unit is located in the desert or in the arctic. This was the basic requirement set down by the U. S. Navy for air-conditioning its electronic trailers.

These all-aluminum trailers can be flown long distances to operate whenever they may be needed as control centers for combat airplanes. Each trailer measures 25 x 8 x 8½' and is equipped with curtain rod dolly frames making it easy to slide the trailer off its carriage for loading. The 19' frames and wheels are telescoped down to a 6' package. Two trailers side by side are zipped together with a canvas seal to form a control center.

Washington Refrigeration Co., Washington, D. C., was asked to design a system to control temperature and humidity in one of these control centers. Requirements were to provide a temperature of 78 F db, and relative humidity not to exceed 50% at the location of the controls with a maximum outside ambient of 95 F db, 78 F wb, under extreme summer conditions, and 72 F db inside when outside temperature is 20 F in winter. Since the trailers are transported by air it was important to keep the weight of the air-conditioning systems to a minimum.

The cooling load was figured on the basis of eight occupants; normal heat leakage from walls, ceilings and floors, despite the 3" glass fiber insulation of all surfaces; 1500 watts of lighting; and heat gained from

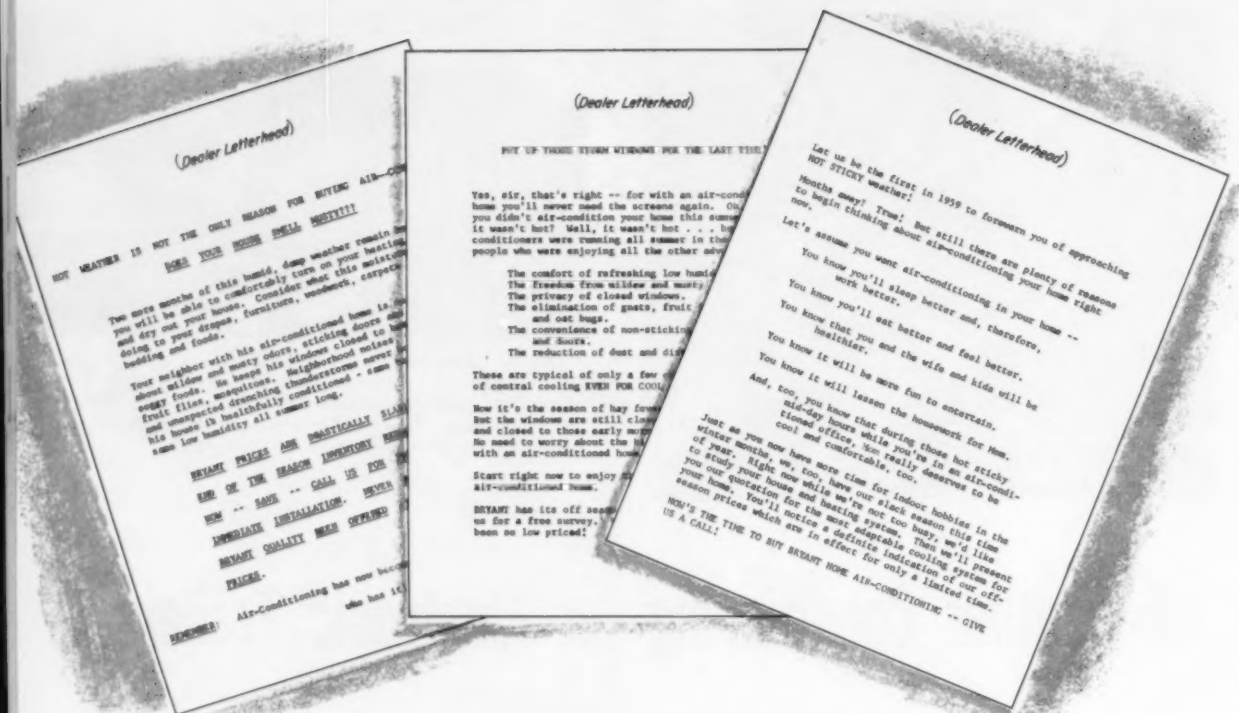
the horsepower output; plus 50 cfm outside air for ventilation. More heat was generated by the use of heavy transformers, dynamos, and clusters of rectifiers, amplifiers, and vacuum tubes.

To meet the specifications, Washington Refrigeration Co. installed a 4-ton package unit in each of the two trailers comprising the control center. Each unit is equipped with an air condenser coil; a compressor and motor and externally mounted starter; a cooling coil with expansion valve; a conditioned air fan and motor with external starter; an electric strip heater and starter; a suction gas unit for liquid heat exchange; and an air compressor with strainer and relay valves for one pneumatic control system.

All equipment is packaged in a single housing at the front end of each trailer between a test bench and the air intake plenum. Using short lines and substituting aluminum parts wherever possible, cut the weight of the units about 25%.

Electrostatic filters and dust collectors are located in the fresh air intakes instead of standard commercial screen strainers. This insures adequately filtered air regardless of the wide range of climatic conditions under which the system will have to perform.

The cooling cycle was carefully designed to operate in two steps with each compressor cutting into the system as the load increases. This eliminates heavy power surges, a problem where the mobile electronic unit must produce its own power. It also relieves power requirements when weather is mild.



This distributor designs a direct mail program to prove that

Air-conditioning Does More Than Cool

CAN YOUR DIRECT MAIL campaign be a success if you use only factory-supplied material? One distributor, Bryant-Hedback Co., Indianapolis, Ind., doesn't think it can. So this firm has produced its own series of mailings on some of the least publicized benefits of air-conditioning.

Owner Phil Hedback, and Lee Kennedy of the sales department, became convinced that most people think of air-conditioning merely as something to keep them cool in hot weather. Hedback admitted that even his own firm had done much to create that impression.

What about the other benefits? Hedback and his employees could answer this question firsthand. Almost all of them have central air-

conditioned homes. All of his salesmen drive air-conditioned cars. So why not tell this full benefit story to prospects?

A direct mail program aimed at doing just this was made available to all of Hedback's dealers. Interested dealers simply had to supply their lists of prospects and enough letterheads for the mailings. Hedback did the rest. The company printed the promotional copy on the dealers' letterhead, addressed the envelopes, supplied the postage, and took care of all of the mailing.

The first mailing was made last July. It included a booklet prepared by Minneapolis-Honeywell Regulator Co., but stamped with each dealer's name. This booklet, compiled with the help of 107 manu-

facturers of air-conditioning equipment, told the homeowner all about the advantages of an air-conditioned residence.

Hedback's first mailing asked: "Does Your House Smell Musty?" It explained the harm moisture can do to such things as drapes, furniture, woodwork, carpets, clothes, bedding, and foods. It continued: "Your neighbor with his air-conditioned home is not worried about mildew and musty odors, sticking doors and drawers, and soggy foods. He keeps his windows closed to humidity, gnats, fruit flies, and mosquitoes. Neighborhood noises, dust, pollen, and unexpected drenching thunderstorms never bother him because his house is healthfully conditioned — same

temperature — same low humidity all summer long.”

The theme of the next mailing was: “Put Up Those Storm Windows for the Last Time!” It pointed out that an air-conditioned home never needs screens. The message later appealed to the person with hay fever, whose windows could remain shut during the trouble season if he had air-conditioning.

Starts the New Year Right

The first mailing of the new year began: “Let us be the first in 1959 to forewarn you of approaching HOT STICKY weather! Months away? True! But still there are plenty of reasons to begin thinking about air-conditioning your home right now.” Some of them are:

“You know you’ll sleep better and, therefore, work better.

“You know you’ll eat better and feel better.

“You know that you and the wife and kids will be healthier.

“You know it will be more fun to entertain.

“You know it will lessen the housework for Mom.

“And, too, you know that during those hot, sticky mid-day hours while you’re in an air-conditioned office, Mom really deserves to be cool and comfortable, too.”

The piece ended by reminding the reader to act during the dealer’s slack season when the dealer had the most time to serve him.

24 Dealers, 6000 Names

Twenty-four dealers took part in the program. More than 6,000 names were used in the mailings. They ranged in number per dealer from 16 to 725. Dealers obtained names by the following ways:

1. Personal acquaintances.
2. Users’ lists.
3. Country club membership lists.
4. Names of doctors and other prominent people from the yellow pages of the telephone books.
5. Lists from other mailings.
6. By driving up and down streets in certain areas of the dealers’ respective towns and using street numbers from these sections.

Continued on page 78



This baker's walk-in freezer brings

MORE SALES, LESS STALES

A WALK-IN FREEZER will pay for itself. That’s the way one baker has it figured.

Al Marklin, owner of Marklin Bakery Shop, in suburban St. Louis, Mo., admits it costs a lot to install a 10 x 12 x 8½’ walk-in freezer. But he figures that his extra profits and savings will enable him to write it off in less than eight years.

The freezer, designed to maintain —10 F, was built alongside a dough retarder of similar size.

“Now we bake for the freezer first,” says Marklin, “and then the oven. About a third of each batch goes to the freezer. The rest we bake for sale. What we save up in the freezer during the week takes care of our Saturday volume. Thus we avoid the expense of extra bakers on Fridays and Saturdays. That helps to pay for the freezer.

“That freezer makes money for us in another way,” continued Marklin. “It tides us over unexpected rushes. It’s easy to hold extra baked goods in it. The walk-in holds 145 pans of cakes, cookies, rolls, bread, and Danish pastries.

“This is an unpredictable business. One day you sell out of bread by 2 o’clock and lose sales the rest of the day. Another day you’re stuck with 25 loaves. You pay for your bum guesses in stales, unless, like me, you have a freezer.

“I can schedule my production very closely, because I can draw on my reserves in the freezer. Even if I do guess wrong, I’m not lost. I’ve found that we can hold unsold bread for several days in the freezer and still have it salable. Rarely do we have to sell it at cut price.”

In experimenting with his freezer Marklin proved he could freeze 90% of his goods successfully. He found, however, that milk powder should not be used in products intended for sub-zero storage. His No. 1 seller, sandwich buns, came out of the freezer in blistered condition when made with milk powder. Marklin changed to sweet or condensed milk, and the blistering stopped. He no longer uses milk powder in 25 of his products.

These Cold Storage Walls Were Built on the Ground

WANT TO SAVE TIME AND MONEY in applying cold storage insulation to a new refrigerated warehouse? Try building and insulating wall sections horizontally instead of vertically.

This was the method used in the erection of Grand Union Co.'s new perishable foods warehouse at Mt. Kisco, N. Y. According to Stephen Kachmar, superintendent, Albany contract unit, Johns-Manville Sales Corp., Grand Union wanted this huge warehouse built fast, and with the greatest possible insulating and fireproofing value for each dollar spent. This unusual construction method scored on all counts.

As each wall frame was built, two layers of "Rock Cork" block insulation were laid out in the frame, each layer being asphalt coated. The layers of insulation were arranged so the butt ends were staggered. Then the frame was covered with aluminum foil and sealed. The high structural strength of the insulation made it possible to use the cork board as

a free standing wall. Galvanized wire was used to reinforce the walls as an added precaution.

As each wall section was finished, it was hoisted into place and forced into the metal framework of the building. Even the pillars were lined with block and pipe covering to keep heat from seeping in.

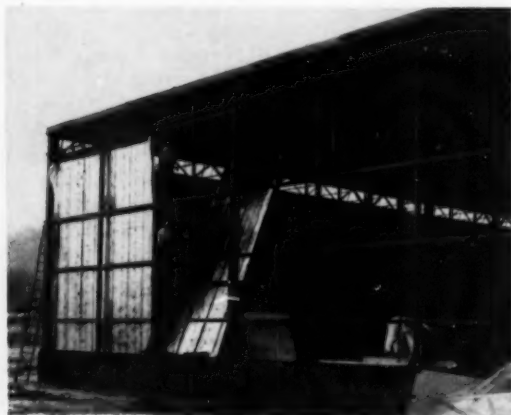
The T-iron ceiling was installed using galvanized nails to secure

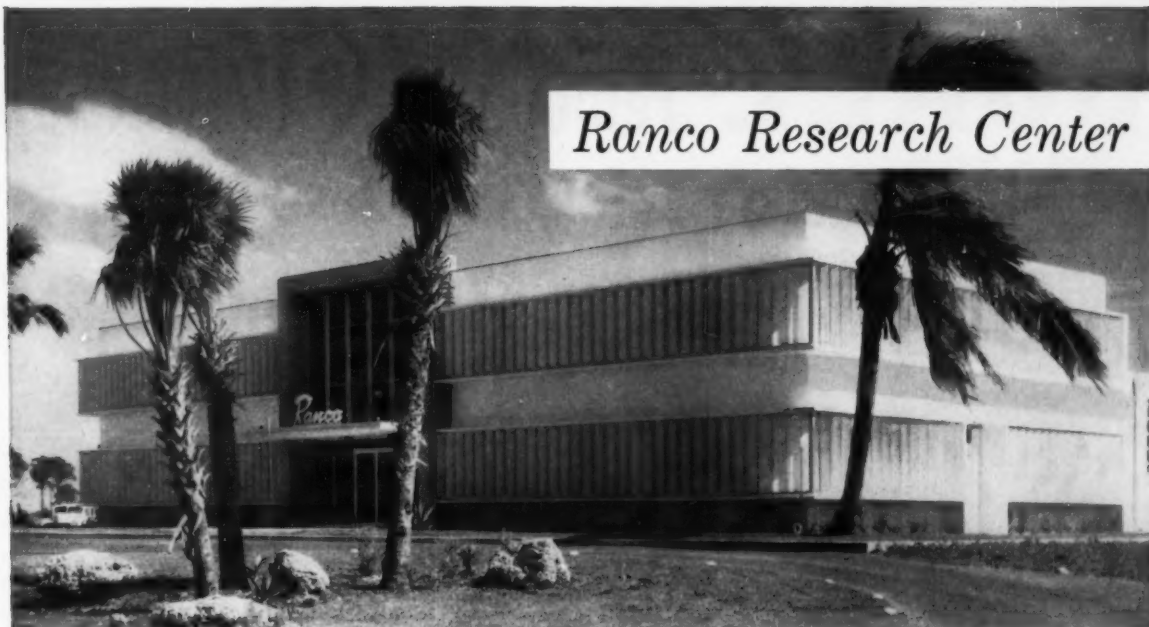
the cork panels, dipped in hot asphalt, to the ceiling. Vinyl acetate and aluminum foil was used as a vapor barrier.

A total of 26 carloads of Rock Cork insulation were used to line the walls and ceilings. The warehouse has 4,396,000 cu.ft. of storage space which includes both freezers and coolers.

The plant is cooled by a 925-hp F-12 refrigeration system.

ASPHALT and an aluminum foil vapor is applied with two layers of block cork insulation as walls are built in horizontal panels. Each wall section then is hoisted into position and forced into the metal wall framework of the refrigerated food warehouse. High structural strength of the insulation made possible its use as a free standing wall. This method saved time and money.



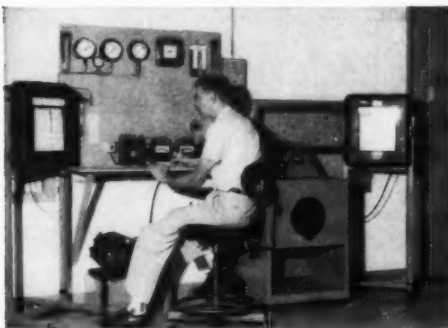


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New Test Chamber—air conditioning and heat pump systems go through the paces in double-walled test chamber. Ambient temperatures and humidities from sub-zero to tropical range are simulated in outside room while desired temperature-humidity conditions are maintained inside.



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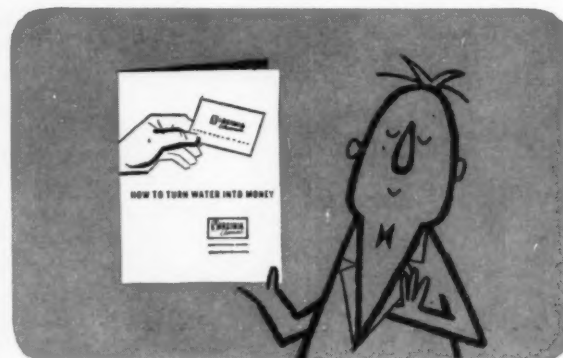
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Circle No. 64 on Reader Service Card



by Hugo C. Smith

Design Coolers and Freezers for Heavy Product Loads

MANY COMMERCIAL cooler and freezer installations fail to do the job expected of them by those who operate them. This means an unhappy customer. And an unhappy customer means an unhappy contractor, for the user who is not satisfied with the way his refrigerated room performs is sure to come back at the man who installed the equipment.

What's the reason for this high percentage of job failures, and the resulting dissatisfaction? In the great majority of cases it is simply because the operator of the refrigerated facilities pushes the product loading of his cooler far past the maximum originally indicated to the contractor, and consequently for which the system was designed.

A large percentage of such failures could be eliminated if the contractor would anticipate these heavy loading conditions and urge the customer to accept a system capable of handling them.

As a matter of general practice, coolers and freezers today are being subjected to product loads far in excess of those encountered a few years ago. Lower temperatures and quick pull-downs are being demanded more than previously, particularly in the wholesale produce, poultry, dairy products, and meat business. The result, in many instances, is failure of equipment which was never designed to handle these loads.

After 25 years of experience in the commercial refrigeration industry, I seriously question any

design conditions not based on heavy service.

The light service often characterized by the customer as normal for his operation can change to extra-heavy service virtually overnight as a result of increased business, the addition of new products, or a change in handling methods. Thus light product loads arriving at relatively low temperatures may change rapidly to heavy loads arriving at high temperatures, and if the refrigeration system hasn't been designed with this possibility in mind it won't do the job.

The only answer to this problem is to insist upon designing cooler and freezer rooms for heavy loading conditions. Here are some practical pointers that will help you do it.

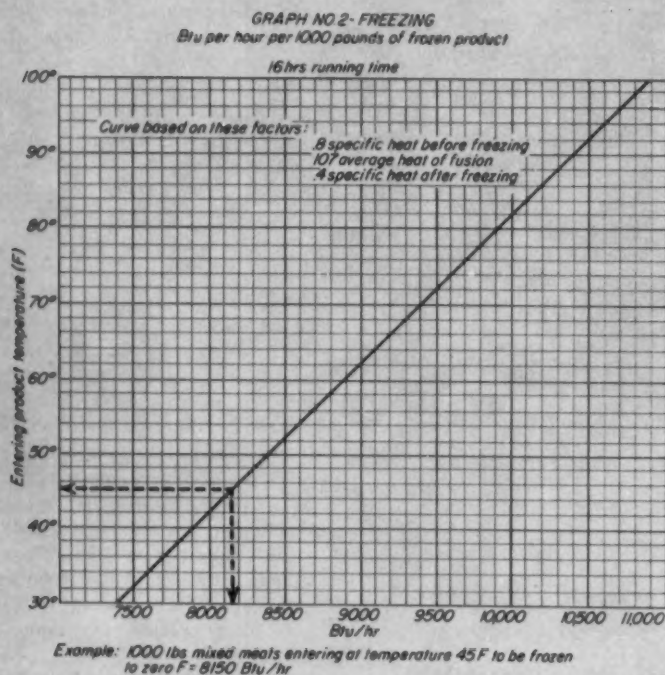
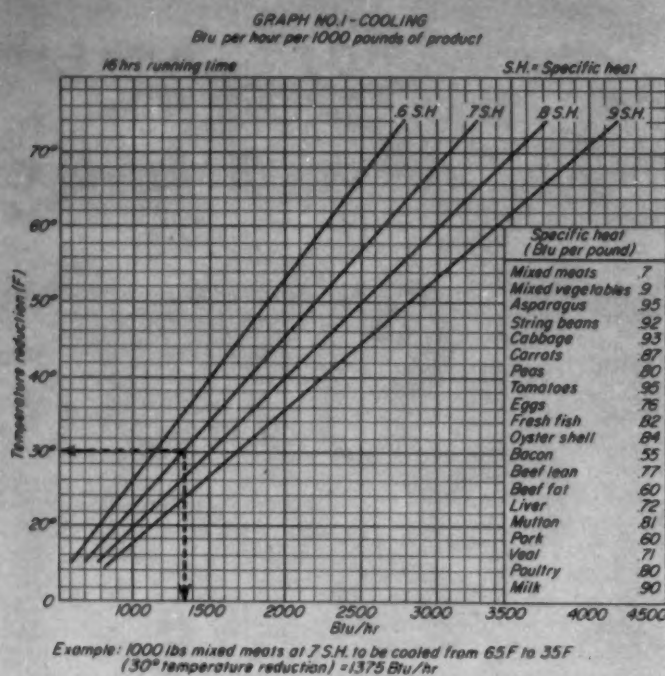
Table 1 indicates minimum daily potential product loads recommended for both coolers and freezers in relation to square feet of outside surface. If you design a cooler or freezer refrigeration system for lighter loading than this you're in for trouble when the cooler is used to its full potential.

These figures are based on long experience with this type of work. Every effort should be exerted to sell the customer on the advisability of designing the system to meet these minimums, regardless of what his present use of this space may be. To save yourself trouble later, do all that you can to convince him that it is economically sound for him to provide now for a possible expansion of his activities.

Once you have learned the type and amount of product that will be loaded into the cooler or freezer

TABLE 1
Minimum daily
potential product
loads for coolers
and freezers of
various sizes.

OUTSIDE SQ. FT. SURFACE	COOLER POTENTIAL PRODUCT LOAD (LBS)	FREEZER POTENTIAL PRODUCT LOAD (LBS)
200-1600	6400-8000	1600-2000
1600-2000	8000-10000	2000-2500
2000-3000	10000-14000	2500-3500
3000-4000	14000-22000	3500-5500
4000-5000	22000-28000	5500-7000
5000-6000	28000-34400	7000-8600
6000-8000	34400-48000	8600-12000
8000-10,000	48000-64000	12000-16000
10,000-15,000	64000-96000	16000-24000
15,000-20,000	96000-144000	24000-36000
20,000-UP	144000-UP	36000-UP



er, the two graphs presented with this article will help you quickly determine the heat load that will be imposed. This will guide you in engineering an installation with adequate capacity to handle any reasonable future developments.

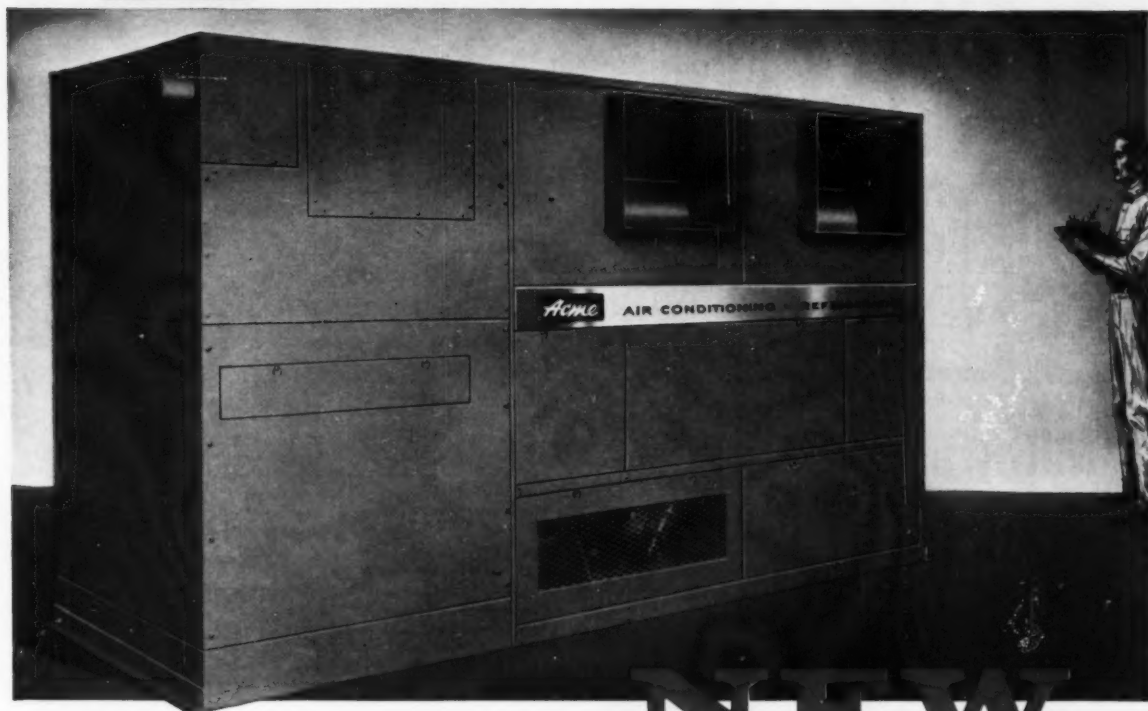
Graph No. 1 is for coolers. It is based on 16 hours running time, which compensates for the heat of evolution in a mixed produce room.

For best results most products should be brought down to storage temperature quickly. Rows of packaged products should not be piled more than two deep during the initial pull-down period. After the freshly loaded product has been brought down to room temperature it may be repiled more compactly. Packaged products piled closely together will give up their heat very slowly, taking as long as 24 to 36 hours, depending upon the size of the pile and the type of package.

The example shown on this graph indicates how the graph should be used. This example is based on a product load of 1000 lbs. of mixed meats which is to be cooled from 65 to 35 F, a temperature reduction of 30 degrees. The table of specific heat for various products indicates that the specific heat for mixed meats is .7. Follow the 30-degree temperature reduction line over to the .7 specific heat curve and you will find that these lines intersect at a point indicating 1375 Btu.

Graph No. 2 is for freezers. It is based on an average of 14 products showing an average of .8 specific heat before freezing, 107 Btu/lb latent heat of fusion, and .4 specific heat after freezing. It is assumed that all products will be frozen down to zero F. These calculations are figured on the basis of 16 hours running time.

To use this graph, first determine the entering temperature of the product. The example used shows 1000 lbs. of mixed meats with an entering temperature of 45 F. Follow this temperature reduction line over to the curve and you will find that these lines intersect at a point indicating 8150 Btu.

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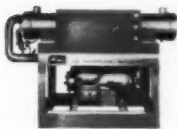
- ☆ Complete air conditioning system in one factory-assembled package.
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For complete information on the new Acme Packaged Air Conditioner, call your local Acme sales engineer or write to the factory.

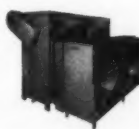
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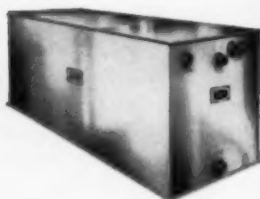
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Circle No. 39 on Reader Service Card

USEFUL Literature

VENTURA FANS are the subject of Bulletin 8914 released by American Blower Div., American-Standard. The four-page bulletin describes the company's expanded line and gives tables listing 42 low-pressure fans, and 50 high-pressure fans. Tables list fan speed, motor horsepower, quietness rating, net weight, and delivery over a range of static pressure values. Another chart explains significance of different quietness ratings. Dimensional and installation data is also listed.

Circle No. 86 on Reader Service Card

ZONED HEAT is the subject of a colorful folder published by Edwards Engineering Corp. Describes principles and components of the system, and illustrates typical installations. Cutaway views show details of component parts.

Circle No. 87 on Reader Service Card

A COMPLETE LINE of freezers, refrigerators, and combination units is described in literature being offered by Loudon Mfg. and Sales, Inc. Colorful leaflets give features and specifications for the company's 1959 line. Full color illustrations make leaflets applicable as sales aids.

Circle No. 88 on Reader Service Card

WELDING FITTINGS for 150 lb. installations is the subject of a catalog (H-1) prepared by Nibco Inc. Includes complete specifications and dimensions on tees, reducing tees, 90° elbows, 45° elbows, and reducers. Explains advantages of welding fittings even in low pressure systems.

Circle No. 89 on Reader Service Card

TABULATED RATING DATA on room air-conditioners is given in a booklet (EM-R-581, Rev. 21) published by Drayer-Manson, Div. of National-U.S. Radiator Corp. Nine pages of engineering data details four models in the company's line. Prepared for consulting engineers at specification levels on jobs calling for fan-coil units. Chart format simplifies selection, details cooling capacities for chilled water and direct expansion type systems.

Circle No. 90 on Reader Service Card

AMMONIA VALVES and refrigeration products are the subject of the 9th edition of the Cyrus Shank Co. catalog. Arranged for easy reference, each valve is pictured with a cutaway view, and features, specifications and dimensions are listed.

Circle No. 91 on Reader Service Card

FASTER INSTALLATION of glass fiber duct liners is described in a folder (WDN-2) published by L. O. F. Glass Fibers Co. Lists product advantages, full description and properties. Also illustrates thermal efficiency, charts acoustical performance and gives specifications for both liners and wraps.

Circle No. 92 on Reader Service Card

HOT WATER HEATING COILS are the subject of a new bulletin published by Halstead & Mitchell. Provides complete dimensional and rating data for selection of proper coils for most applications.

Circle No. 93 on Reader Service Card

TYPICAL MORTUARY RACK and refrigerator arrangements are described in a folder (R-343) published by Market Forge Co. Shows several arrangements and lists features.

Circle No. 94 on Reader Service Card

PRESSURE TEMPERATURE CARD with the temperature scale extended to over 200 F is available from Detroit Controls. Can be used in automobile air-conditioning applications. Temperature range from -22 to 40 F is in 1° increments for closer readings for R-12.

Circle No. 95 on Reader Service Card

THE MEASURE OF TUBEMANSHIP is the title of a brochure published by Wolverine Tube Div. of Calumet & Hecla, Inc. Purpose of the brochure is to further acquaint industry with combination of skills and techniques necessary to manufacture seamless copper and copper alloy tubing. Shows complete company facilities in quality control, production, development and related customer services.

Circle No. 96 on Reader Service Card

A VARIETY OF APPLICATIONS of air-conditioning, refrigeration, heating, and heat transfer equipment is colorfully illustrated in Folder 507 by Dunham-Bush, Inc. Illustrates types of equipment used in various plants, offices, and institutions.

Circle No. 97 on Reader Service Card

CENTRIFUGAL REFRIGERATION SYSTEMS is the subject of a new bulletin (1100-8102) being offered by Worthington Corp. Contains complete information about compressor, motor, guide vanes, impellers and lubrication system of the units. Also includes chart of various condenser and cooler water nozzle arrangements possible with two and three pass coolers and condensers.

Circle No. 98 on Reader Service Card

REFRIGERANT CONDENSERS are described in Bulletin 131 prepared by Niagara Blower Co. Shows benefits of panel construction in condensers with capacities from 100 to 240 tons refrigeration. Illustrations, diagrams and photos explain functions of evaporative condensers with precooling coil and oil remover.

Circle No. 99 on Reader Service Card

PROBLEMS OF INSULATING refrigerated cargo trailers and truck bodies have been published in a brochure by Armstrong Cork Co. Describes how air infiltration adds to heat gain, and how to stop it. Solution of problems includes recommended air barrier treatment.

Circle No. 100 on Reader Service Card

AIR HANDLERS in capacities from 665 to 19,200 cfm are described in a catalog (382A) offered by Acme Industries, Inc. Includes performance data, specifications and dimensions. Also covers accessories such as mixing boxes, face and bypass dampers, coils and other related items.

Circle No. 101 on Reader Service Card

SNAP-ON PIPE INSULATION is described in a brochure offered by Gustin-Bacon Mfg. Co. Lists sales features and application information. Illustrations show its use on various types of fittings and valves.

Circle No. 102 on Reader Service Card

HOW TO INSTALL flexible metal hose for longest service is described in a bulletin (N14A) available from Korfund Co., Inc. Diagrams explain correct use of flexible connections to compensate for misalignment, and to eliminate vibration transmission. Includes detailed instructions on how to install all types of flexible metal hose properly.

Circle No. 103 on Reader Service Card

AC DRAWN-CASE CAPACITORS are described in Bulletin GEA-6789 published by General Electric Co. Listed are construction features and application information. Also included are equipment photos, charts, dimensional diagrams, and rating and dimension tables.

Circle No. 104 on Reader Service Card

HEATING AND VENTILATING UNITS available in 12 sizes are described in Bulletin 910 by American Air Filter Co. Lists specifications and dimensions for Herman Nelson units with capacities ranging from 600 to 73,000 cfm. Lists details of components and accessories available.

Circle No. 105 on Reader Service Card

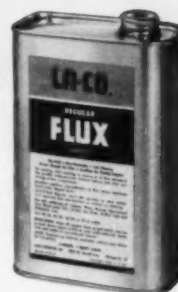
DESCRIPTION AND SPECIFICATIONS of thermocouples are given in a new bulletin (P1281) offered by Bristol Co. Lists available types, materials, sizes, thermocouple curves, and applications.

Circle No. 106 on Reader Service Card

FEBRUARY 1959

Circle No. 41 on Reader Service Card

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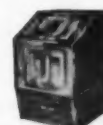
LA-CO Flux (Regular) is used for soft soldering of copper, lead, galvanized iron, tin, zinc and other common metals. See for Yourself! Hack-saw a LA-CO Fluxed soldered job in half and see the perfect bond. Write on company letterhead for sample of LA-CO Regular Flux (Liquid).

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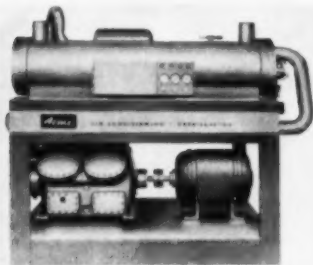
Circle No. 42 on Reader Service Card

Water Chiller

Product: "Flow Therm" packaged water chiller (Model DE).

Manufacturer: Acme Industries Inc., Jackson, Mich.

Features: Factory assembled packaged unit. Designed to provide chilled water for air-conditioning systems in medium and large commercial installations for industrial process applications. Consists of di-



rect drive compressor, compressor motor, water cooler, water cooled condenser, heat exchanger, necessary safety and operating controls, inter-connected refrigerant piping and a structural steel frame. Also available without water-cooled condenser for use with evaporative condenser. Capacities range from 20 to 125 tons.

Circle No. 137 on Reader Service Card

Cold Storage Door

Product: "Jamolite" flush-fitting plastic cold storage door and frame.

Manufacturer: Jamison Cold Storage Door Co., Hagerstown, Md.

Features: Average weight is only 70 to 80 lbs., about 1/4 that of equally effective freezer doors. Easy



to open and close, requires less aisle space for full door swing, permits the use of less bulky hardware. Hermetically sealed construction provides longer door life under high humidity conditions. Glass-cloth reinforced polyester plastic exterior is

easy to clean. Insulation is foamed-in-place polyurethane plastic. High K factor enables a 4" thickness to provide all insulation necessary for cooler and most freezer installations. Because of light weight and eye appeal women may be expected to close the door when entering a walk-in cooler, eliminating a major source of refrigeration loss. Available in a range of colors and sizes in reach-in and walk-in cooler and freezer doors, and vertical and horizontal sliding doors. Doors also available with 6" insulation for severe freezer conditions.

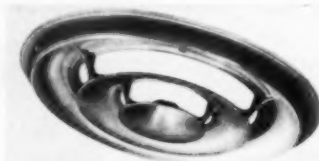
Circle No. 138 on Reader Service Card

Plastic Diffusers

Product: Line of one-piece molded plastic diffusers.

Manufacturer: Air Guide Plastics Corp., Miami, Fla.

Features: Available in sizes to fit standard ducts and dampers, or for ceiling installation. Sculptured contours in plastic molding produces efficient air-flow usually found only



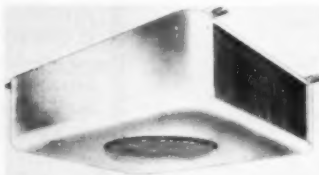
in top-priced lines. Provides air-tight seal at duct opening without gaskets. White and pastel colors will not fade or chip. Withstands extreme temperatures under heating and air-conditioning usage. Flame-resistant, and non-corrosive.

Circle No. 139 on Reader Service Card

Unit Coolers

Product: "Spasaver" line of high temperature unit coolers.

Manufacturer: Drayer-Hanson, Div. National-U.S. Radiator Corp., Los Angeles, Calif.



Features: Designed for applications over 34 F. Complete series includes 9 models. Large access door for installing or servicing expansion valve. Chrome-plated fan guard with

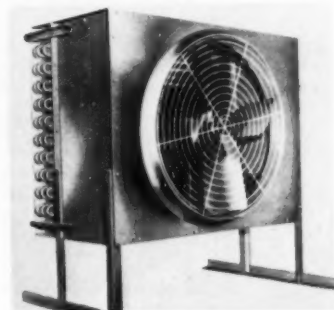
rust-free aluminum housing, baked enamel finish; improved hangar mountings; motor mount area, made more rigid and vibration free. Typical applications include storage rooms, food processing plants, warehousing, restaurant refrigeration, and walk-in refrigerators. Motor and fan may be removed thru bottom pan, without removing the pan. Capacities range from 730 to 36,000 fan cfm.

Circle No. 140 on Reader Service Card

Air Cooled Condensers

Product: Line of air cooled condensers.

Manufacturer: Typhoon Air Conditioning Co., Div. of Hupp Corp., Brooklyn, N. Y.

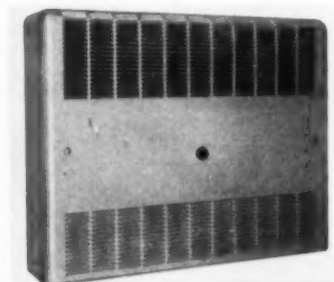


Features: Available in 8 models with air movement ranging from 2750 to 40,000 cfm. All but the two smallest models are belt driven. Can be used where water supply, disposal problems, or excessive in room condenser heat make air-cooling preferable. Coil design allows high air volume at low fan speed. Any number of inlets and outlets up to the number of rows of coils may be provided for multiple circuits. Available with floor or ceiling mountings. Wind deflectors also available.

Circle No. 141 on Reader Service Card

Combination Units

Product: Cooling-heating conditioners (Models CHC-150, CHC-300).

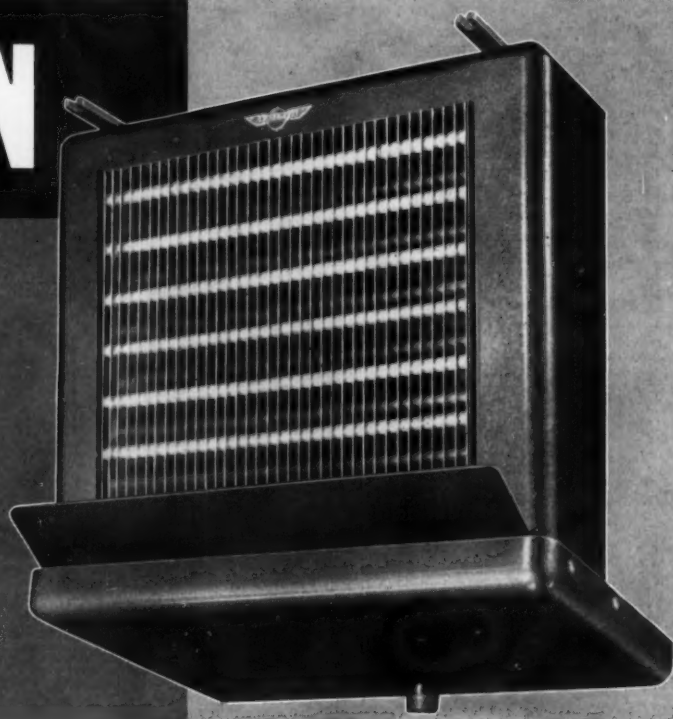


Manufacturer: Dunham-Bush, Inc., West Hartford, Conn.

Features: Designed to meet

LARKIN

TOPS IN LOW TEMPERATURE



You name the application. For low temperature requirements, LARKIN is tops. There are ceiling, wall, and mullion humi-temps to choose from, all equipped with the simplest fool-proof automatic hot-gas defroster on the market—Frost-O-Trol.

Installation of units with Frost-O-Trol is quick, simple and economical. All you have to do is run one extra wire, one extra gas line and mount the compact control panel.

Secret of the patented Frost-O-Trol system is the factory-installed metering orifice which protects the compressor against slug back—making a re-evaporator completely unnecessary.

See your wholesaler or write for Bulletins 1032 and 1056.

BASIC RATINGS

Model	Capacity Rating Btu/hr @ 10°F TD	Total Surface Area	Cfm
LT-26	2600	69	800
LT-32	3200	79	1000
LT-42	4200	98	1400
LT-52	5200	131	1550
LT-65	6500	150	1700
LT-82	8200	201	2200
LT-104	10400	226	2800
LT-130	13000	301	3200
LT-160	16000	401	4400
LT-240	24000	501	5600

Quality Features

- Minimum temperature rise during defrosting
- Adjustable defrosting time and frequency
- No excess heat or moisture load
- Lower operating costs
- Higher efficiency of evaporator unit
- Heat applied throughout entire evaporator
- Melts frost from inside out
- Simple, low-cost installation
- Drip pan is electrically heated by a carbon impregnated, water-proof, molded rubber pad—assures positive drainage of melting ice and water—prevents freezing and spill-over
- Larkin patented Cross Fin coil—staggered tubing
- Heavy gauge die stamped aluminum case
- Self-locking nuts; vibration-proof assembly
- Standard motors with thermal overload protection

FROST-O-TROL® HOT GAS DEFROSTING ALSO AVAILABLE ON THE

WALL HUMI-TEMP



AND THE MULLION HUMI-TEMP



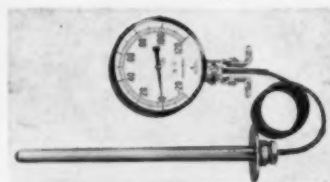
space and capacity requirements of hotels, motels, apartments and residences. Can be used as free standing units, or semi-recessed applications. Can be wall mounted, fully exposed or semi-recessed, as required. Matching trim pieces are available for finishing purposes on semi-recessed applications. Fresh air wall boxes are available to meet ventilation requirements calling for the introduction of fresh air up to 20% of the rated cfm.

Circle No. 142 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

Duct Thermometers

Product: Dial type duct thermometers.



Manufacturer: Jas. P. Marsh Corp., Skokie, Ill.

Features: Universal joint permits the dial to be swivelled or tilted

to any position. Dial can be adjusted to any convenient reading angle regardless of the positioning of the flange on the duct. Two types available, one for direct mounting at the point of measurement; and distant reading type, with 6' capillary tube for application where the dial should be away from the point of measurement. Ambient temperatures do not affect the accuracy of the readings. Temperature ranges available are: -40 to 120 F with 2F divisions; 0 to 160 F with 2F divisions; 0 to 220 F with 5F divisions.

Circle No. 143 on Reader Service Card



PUSH-IN or PUSH-THRU Refrigerator

- reduces labor cost where food is served in quantity — 62 tray capacity • entire rack moves into refrigerator • no recessing in floors, no ramps required • available with doors on one or both sides



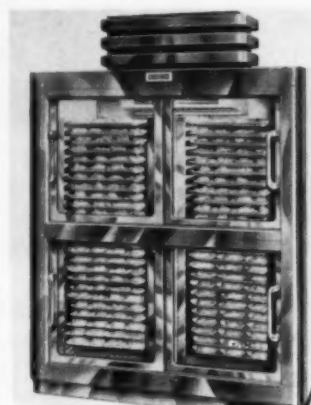
New EXTRA LARGE Capacity Sliding Door Refrigerator

- more capacity for less money
- extra-wide sliding doors for full display • better illumination
- non-sag channel steel, adjustable shelves

Reach-In Cabinet

Product: Reach-in refrigerators (Series MY).

Manufacturer: Koch Refrigerators, Inc., Kansas City, Kan.



Features: Available in any combination of stainless steel and white or colored porcelain, in front opening or pass through door arrangement, in any combination of sliding and conventional hinged doors. Refrigeration may be remote or self-contained. Two, three, and four section widths have net capacities of 45.5, 70.0 and 92.6 cu.ft. respectively. One-piece stainless steel sliding doors glazed with twin glass assemblies, or solid sliding doors. Vertical fluorescent lighting between each pair of doors.

Circle No. 144 on Reader Service Card

EQUIPMENT YOU CAN SELL NOW!

These 3 SCHMIDT Units
*have features to help you
meet competition and make a profit!*

WALK-INS, OUTDOOR/INDOOR

- exclusive refrigeration system for coolers reduces drying out of meats . . . eliminates annoying blasts of cold air . . . absorbs odors
- movable, sectional steel construction • 6 types of floors to meet all conditions • can be erected outdoors • all size coolers and freezers

Sell and install SCHMIDT's complete line of profit-proved refrigeration. Write today for catalog and complete information.



THE C. SCHMIDT COMPANY 1712 John St., Cincinnati 14, Ohio

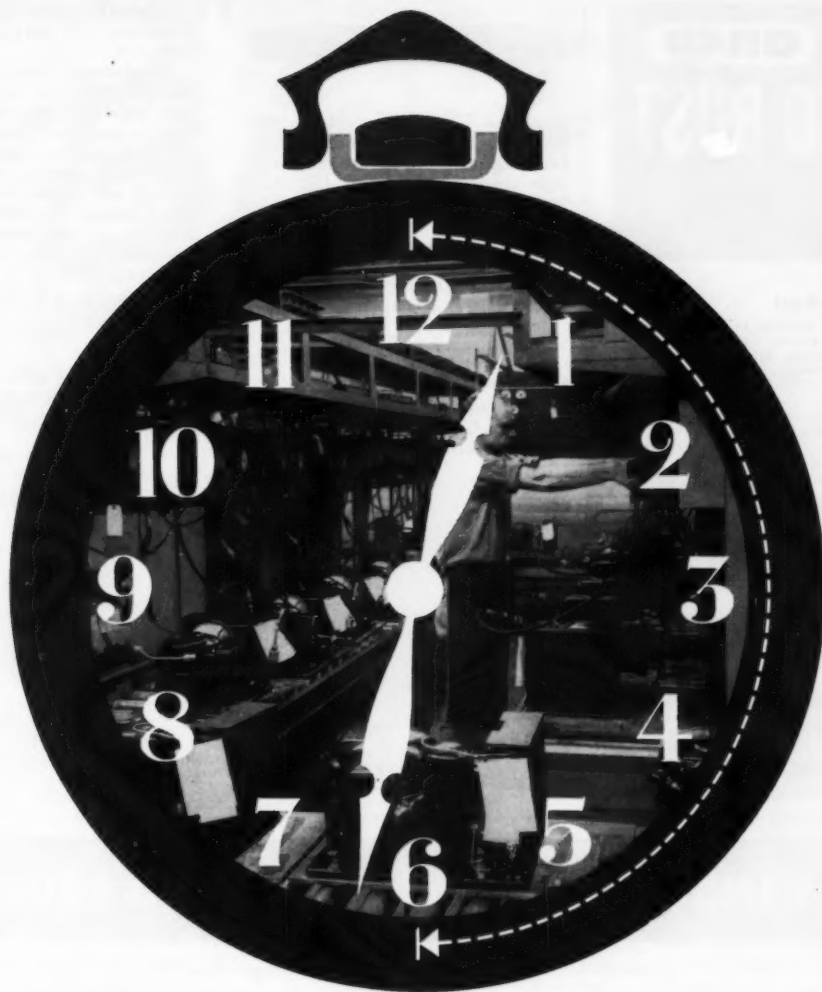
Circle No. 44 Reader Service Card

Metal Connectors

Product: "Flex-Hose" line of flexible metal connectors.

Manufacturer: Korfund Co. Inc., Long Island City, N.Y.

Features: Braid design provides high burst strengths. Eliminates vibration and pulsations, compensates for misalignment and reduces strain on piping. Maximum steady working pressures at 70 F vary with size up to 1700 psi. Operating temperatures can be as high as 750 F., depending upon materials used. Pressure ratings can be increased by as



ONLY BENDIX-WESTINGHOUSE "TIME-TESTS" CONDENSING UNITS

... exclusive 5-point test program helps customers cut rejects as much as 75%

You can't afford time for rejects. But they occur—probably much too often to suit you. So anything which could cut your line reject rate as much as 75% would interest you, wouldn't it?

And we have it: An industry-exclusive test program which takes the trouble to "time-test" the performance of each Bendix-Westinghouse condensing unit before shipping to commercial refrigeration customers. Under this program—and we're the only manufacturer to go to such great lengths—each unit is "trial run" for a sustained period of time under conditions that *exactly duplicate the operating conditions it will face later*. Here is why you benefit.

During our 5-point test of at least 30 minutes duration, we check suction pressure and head pressure, low voltage performance, refrigerant efficiency, and other important operating factors. If there is

sub-par performance anywhere along the line, that unit isn't shipped.

Sure, this testing program means extra trouble—and expense—to us. But the "product insurance" it brings our customers is the reason why Bendix-Westinghouse condensing units are able to cut line rejects so substantially.

The net result is greater customer satisfaction. And that, after all, is what you—as well as we—are most interested in. Why not find out for yourself what Bendix-Westinghouse *pre-proved* units can mean?

Bendix-Westinghouse

EVANSVILLE, INDIANA

A division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio.
Export Sales: Bendix International, 205 E. 42nd Street, New York 17, New York.

Circle No. 45 on Reader Service Card



Anco No-Mo-Rust

A new product designed to increase your fall and winter profits. This proven-effective formula prevents rust and corrosion in chilled water and steam boilers and in tempered water systems.

Economical to use

One 2-lb. can of No-Mo-Rust provides protection for 250 gal. chilled water, 125 gal. hot water. 2-lb. and 10-lb. cartons, 4 to a case. Order now, enjoy year 'round profits.



Specialists in making water behave



Anderson
Chemical Company, Inc.
Box 1424 • Macon, Georgia



much as 75% by use of multiple braiding. Available in single bronze braiding, and brazed fittings for 12 pipe sizes from $\frac{1}{4}$ to 4" ID (stock lengths 8 to 27"). Also in braided steel wire, and welded fittings, for 7 pipe sizes from 5 to 16" ID (stock lengths 31 to 72"). Stainless steel and monel for special applications. Circle No. 145 on Reader Service Card

Gas Fired Furnaces

Product: "Climaster, Challenger, and Comfort Center" lines of gas fired furnaces.



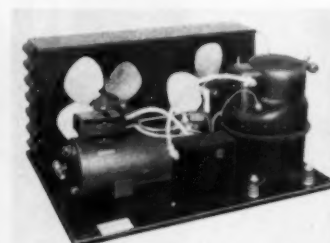
Manufacturer: York Corp., Subsidiary of Borg-Warner Corp., York, Pa.

Features: New V-shaped burners with two rows of flame directs heat toward heat exchanger, allows heat to pass into lower portion of the exchanger to heat air quicker without consuming any more gas. Heated air is circulated by multi-vaned blower. Can be equipped with built-in air-conditioners. Available in upflow, basement, counterflow, or horizontal models.

Circle No. 146 on Reader Service Card

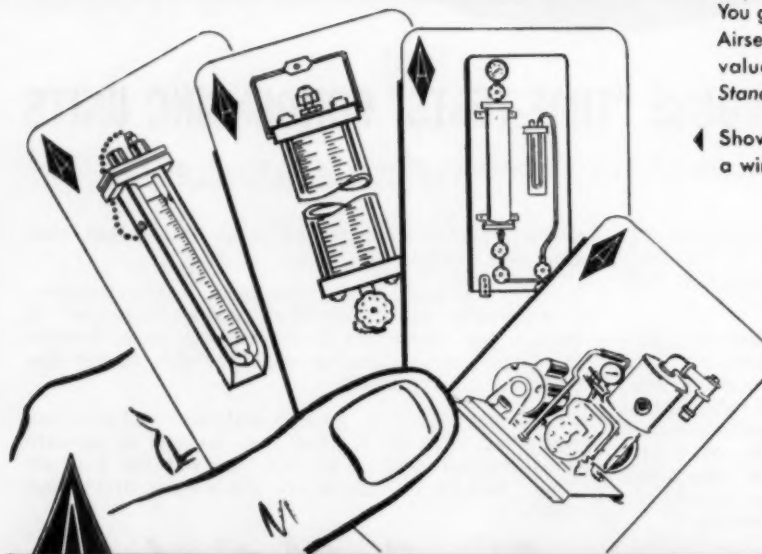
Condensing Units

Product: New line of condensing units (Model BRH150T, BWR H150T).



Manufacturer: Bendix-Westinghouse Automotive Air Brake Co., Evansville, Ind.

It's NO GAMBLE when you buy AIRSERCO PRODUCTS



You get more than just equipment when you buy Airserco Products. You get the "ACES" of extra value, which make Airserco Products "The Standard of the Industry."

Shown here are four Airserco Aces that make a winning hand:

FIRST ACE—Airserco's popular 5-inch Mercury Manometer, which replaces the long unwieldy 30-inch tube formerly required.

SECOND ACE—Airserco's very popular Refrigerant Charging Cylinder, in two sizes, with three precision calibrations.

THIRD ACE—Airserco's popular Midget Refrigerant Charging Panel. Designed especially for hermetic units, air conditioners, shop and on-the-job use.

FOURTH ACE—Airserco's portable, easy-to-use, Kinney KC-3R high vacuum pump... the finest vacuum pump for air conditioning and refrigeration service available in America.

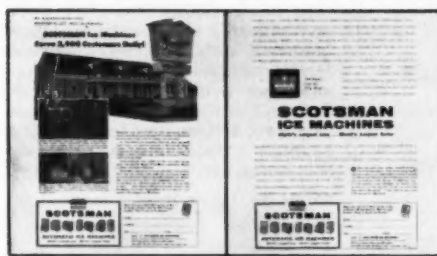
AIRSERCO MANUFACTURING CO., INC. PITTSBURGH 13, PENNSYLVANIA, U.S.A.

Airserco has built more refrigeration testing equipment than any other company in the world.

Here's **SCOTSMAN'S**

Big Plus

- ☆ National Ads in every Ice Machine Market
- ☆ A Tremendous Direct Mail Program to Reach Every Prospect
- ☆ Hard Hitting Local Ad Programs to Boost Your Sales
- ☆ Sales Promotion Campaigns . . . Publicity . . . Sales Aids of Every Description!



THIS KING SIZE PROGRAM BUILDS KING SIZE PROFITS!

It takes less time, less work to sell SCOTSMAN Ice Machines. Here's why—SCOTSMAN Distributors and Dealers are backed by promotion programs that work for you all through the year!

You benefit from hard selling, factual ads specially tailored to every ice machine market . . . publicity



**TO HELP YOU
SELL
SCOTSMAN
ICE MACHINES!**



appearing in a wide range of business magazines . . . a huge direct mail program that brings live SCOTSMAN prospects right to your mailbox. Plus a powerful portfolio of sales aids to build your SCOTSMAN volume.

WHY WAIT? Join the SCOTSMAN parade of profits by sending in the coupon below. It pays to sell SCOTSMAN—the leading ice machine line and biggest profit producer!



SCOTSMAN



AUTOMATIC ICE MACHINES

World's Largest Line • World's Largest Seller

● Send me complete information about a dealer franchise for Scotsman Ice Machines

NAME _____

ADDRESS _____

CITY _____ STATE _____

MAIL TO: **SCOTSMAN ICE MACHINES**
Queen Products Division, King-Seeley Corporation
192 Front Street, Albert Lea, Minnesota

Circle No. 47 on Reader Service Card

Feature: Designed to operate efficiently in high ambient temperatures such as are often encountered on bulk milk cooler applications. Air cooled or water cooled, available in 1½ hp, for use with R-12.

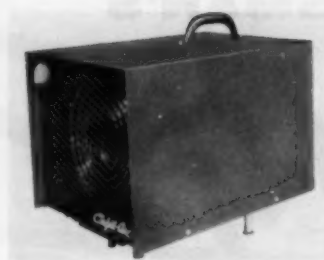
Circle No. 147 on Reader Service Card

Dehumidifiers

Product: "Comfort-Aire" portable electric dehumidifiers (Models DL-15, DLA-15).

Manufacturer: Heat Controller, Inc., Jackson, Mich.

Features: Can be placed over basement floor drain, between joists



or rafters and drip into laundry tub or other receptable. Automatic model has built-in humidistat. Complete unit weighs less than 50 lbs., can be

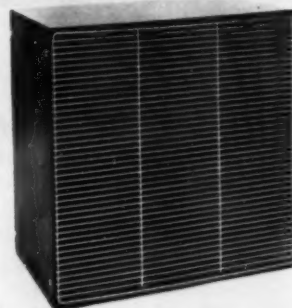
carried by handle on top. Measures 16" x 12" x 16". NEMA rated capacity is 15 lbs. of water per 24 hrs.

Circle No. 148 on Reader Service Card

Air Purifier

Product: Air purifier for home and office (Models 8BB, 8BC).

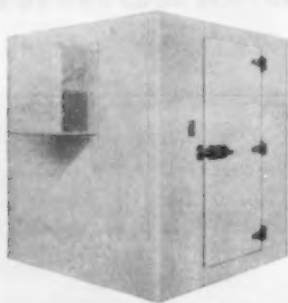
Manufacturer: Barnebey-Cheney Co., Columbus, Ohio.



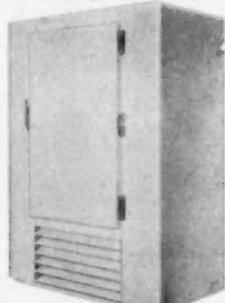
Features: Combined in single case is circulating fan, dust filter, and activated charcoal filter. Offers increased air circulation, more uniform temperatures, control of odors and other irritants, and removal of dust and dirt. Model 8BB measures 14 x 14 x 10", and model 8BC, 22 x 22 x 12". Plugs into any standard connection.

Circle No. 149 on Reader Service Card

NOW...NOR-LAKE
*brings you user-planned,
user-tested cooling and freezing!*



WALK-IN COOLERS—All metal walk-in cooler—one of NOR-LAKE's most popular units! Shipped knock-down in easy-to-put-together sections. Optional Plug-In Panel refrigeration unit mounts on wall or ceiling. Wood or metal walk-in coolers available to your size or height specifications.



REACH-IN REFRIGERATORS—Designed for small stores, restaurants, schools, and industry. Triple door seals. Heavy Fiberglass insulation. Automatic defrosting. Baked enamel finish standard. Model RI Series: 8 models up to 45 cu. ft.



SLIDING DOOR MILK BEVERAGE COOLERS—Just 34½" high—perfect for under counter use. E-Z slide lids disappear completely. Adjustable temp. control. Welded steel construction stainless steel or baked enamel finish. 18 sizes—up to 40 12-oz.-bottle case capacity.

■ ALL MODELS KEPT IN STOCK FOR IMMEDIATE DELIVERY

■ ALL MODELS AVAILABLE IN STAINLESS STEEL

NOR-LAKE, Inc.
Second Ave. and Elm,
Hudson, Wis., Dept. 204



Go **NOR-LAKE** all the way—write for **FREE**, illustrated information:

Please rush **FREE** illustrated information on ☐ Walk-In Coolers

☐ Reach-In Refrigerators

☐ Milk and Beverage Coolers

☐ Other _____

NAME _____

ADDRESS _____

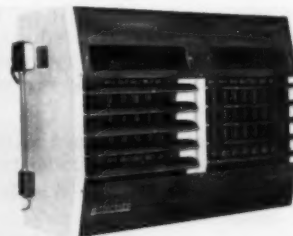
CITY _____

STATE _____

Gas Unit Heaters

Product: "Moncrief" line of direct-fired gas unit heaters.

Manufacturer: Henry Furnace Co., Medina, Ohio.



Features: New steel burner head is tapered to deliver the fuel mixture the entire length of the burners at the same pressure. Heating capacities are 60,000, 90,000, 120,000, 180,000 and 240,000 Btu input. Tapered casing is finished in charcoal and light grey enamel to harmonize with any room color.

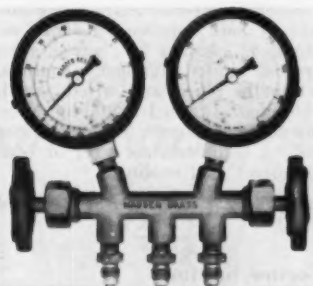
Circle No. 150 on Reader Service Card

Charging Unit

Product: Double gage charging and testing unit.

Manufacturer: Madden Brass Products Co., Aurora, Ill.

Features: All brass forged body, easy-grip handles and replaceable seat. Positive shut-off without



stress and strain. Designed for charging, testing and purging both high and low sides of air-conditioners. Three 1/4" SAE flare connections enable unit to be used with the company's color coded charging lines.

Circle No. 151 on Reader Service Card

Bulk Food Storage

Product: "V-Line" models of commercial refrigerators.

Manufacturer: Victory Metal Mfg. Corp., Plymouth Meeting, Pa.

Features: Available in normal temperature, combination normal temperature and freezer, freezers or warming cabinets. Will take one 18



x 26", two 12 x 20", or two 14 x 18" pans or any fractional sizes. Will take one-half or full size mobile food racks. Comes in 1, 2, 3, and 4 sections in stainless steel, stainless steel and aluminum, baked white enamel, porcelain or any combination. Adjustable counter type legs. Interiors can be changed without tools.

Circle No. 152 on Reader Service Card

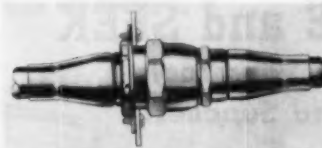
Self-Sealing Coupling

Product: 5500 Series self-sealing couplings for air-conditioning and refrigeration applications.

Manufacturer: Aeroquip Corp., Jackson, Mich.

Features: Useful on commercial and residential units where evaporator and condenser sections are built separately. Suitable with

many refrigerants. Permits factory testing and pre-charging of air-conditioners which then may be shipped



and stored fully charged with refrigerant. Field installation time and costs are reduced.

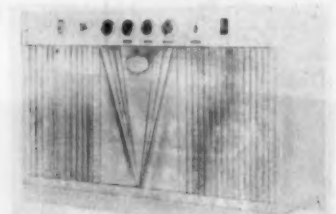
Circle No. 153 on Reader Service Card

Water, Acid Chillers

Product: Packaged chilled water or acid cooling units.

Manufacturer: Kol-Flo Kooler Co., Bayonne, N. J.

Features: For pre-cooling and

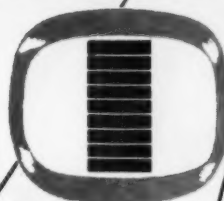


Simplest, most economical way to detect moisture in your refrigerant systems!

Positive sealing



LIQUID EYE® INDICATOR
featuring the built-in
MOISTURE-REACTOR



It's GOOD!

The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green)—it's good—there's no moisture in system.



It's BAD!

If moisture enters the system, every other color bar changes from green to yellow—then it's bad—the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

No more guesswork about the condition of your F-12 and F-22 refrigerant systems. No installation problems either.

Now you can get both in the same unit

... LOWEST COST MOISTURE-REACTOR PROTECTION PLUS ALL THE PROVED LIQUID EYE FEATURES!

CONTACT YOUR WHOLESALE TODAY



Allin Manufacturing Company

410 NORTH HERMITAGE AVE. • CHICAGO 22, ILLINOIS

Over 1,000,000 Liquid Eyes sold to date!

Circle No. 50 on Reader Service Card



**Don't Play
HIDE and SEEK
with your Tools
and Supplies!**

**READING
MAGIC
STOWAWAY**



Keeps 'em Safe . . . Easy to Find Without Wasting Time!

Stow everything neatly, compactly, easy to reach. Change compartment sizes by removing shelves or rearranging bin dividers to suit your load. Perfect protection from loss, theft, weather, and saves you time. Get rugged READING custom-built quality at mass production prices!

- ★ Removable and Adjustable Shelf and Tray Dividers
- ★ 12-14-16 Gauge cold-rolled steel
- ★ Double panel doors and watertight compartments
- ★ Heavy Diamond Deck Steel Floor

READING UTILITY BODIES

job-planned for

REFRIGERATION & AIR CONDITIONING TRADES

READING BODY WORKS, INC., 420 Gregg Avenue, Reading, Penna.




NEW Metal Blade Aeromaster* Fan



AEROMASTER
fans 54" to 22' for
cooling towers and
radiator-type coolers.

Lasts Longer • Costs Less

Efficiency . . . economy . . . durability—three important standards—are yours in the AEROMASTER fan.

AEROMASTER fans are efficient because they embody advanced aerodynamic principles. True airfoil blade sections give maximum air delivery.

AEROMASTER fans are economical because adjustable pitch angle of the blade permits a flexibility of setting which enables you to decrease fan load to an

accurate minimum horse-power requirement. Design features reduce labor and installation costs.

AEROMASTER fans are durable because they are made from corrosion resisting, silicon-magnesium, aluminum alloys with high tensile strength, fine grain structure and increased endurance limit.

For more details write to KOPPERS COMPANY, INC., Aeromaster Fan Dept., 8002 Scott Street, Baltimore 3, Md.

*Koppers
Trademark



Aeromaster Fans

Engineered Products Sold with Service

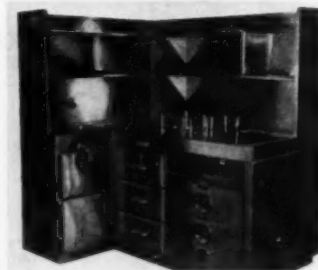
temperature controlling of plating, anodizing and chemical solutions. Completely insulated including cold coolant lines. Enclosed control panel with wired operating and safety controls for precise temperature control of bath solutions. Factory assembled, consists of refrigeration system, chiller, automatic controls, internally piped and wired. Available in sizes from 1 to 100 hp. Manufactured in copper for cold water cooling, and stainless steel or lead for direct acid cooling.

Circle No. 154 on Reader Service Card

Corner Station

Product: Refrigerated corner station.

Manufacturer: S. & R. Soda Fountain Mfg. Co., New York, N. Y.



Features: Measures 4 x 5'. Complete with refrigerated butter drawer under push-back faucet; small door for additional refrigerated storage; 3 stainless steel bread drawers; removable silver bin; and 2-drawer bun warmer. 4 lowerators (1 glass, 1 cup, and 2 plate.) Overhead shelves offset for toaster on one end. Back and front faced with stainless steel. Welded steel construction.

Circle No. 155 on Reader Service Card

Aluminum Grilles

Product: "Airline" all-aluminum grilles.

Manufacturer: Waterloo Register Co., Inc., Waterloo, Iowa.

Features: Available in one piece construction up to 12' in length. Can be used in floor, sill or wall applications. Line includes grilles designed for use as return, exhaust, or supply grilles, or for sidewall applications, including those where there are ceiling obstacles to air distribution. 1/4" face bars on 1/2" centers prevents even pencils from falling through openings. Choice of 8 types, 5 border styles.

Circle No. 156 on Reader Service Card

Testing Unit

Product: Calorimeter-comparator portable testing instrument.

Manufacturer: Liaison Engineering Services, Garland, Tex.

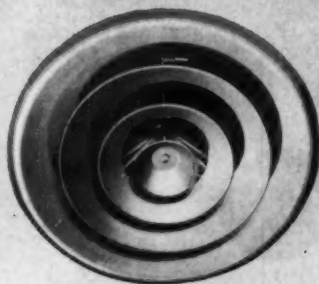
Features: Tests the effectiveness

ANEMOSTAT®

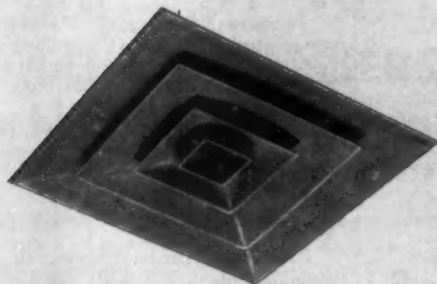
*is a registered
trademark for a wide range
of air diffusion
equipment*

Today Anemostat offers an impressive variety of air diffusion equipment to meet every architectural and engineering requirement. ANEMOSTAT® is a registered trademark. It is your guarantee that every unit bearing this name is of highest quality . . . backed by the most experienced engineering, research and testing laboratories in the industry.

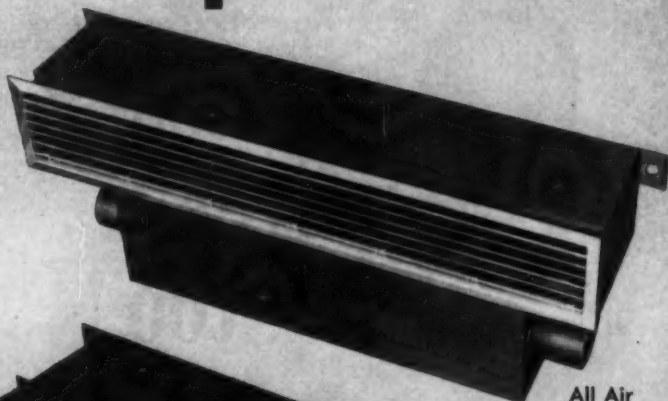
When Anemostat Air Diffusers are in sight the system is right. This was true yesterday, is true today and will be true tomorrow.



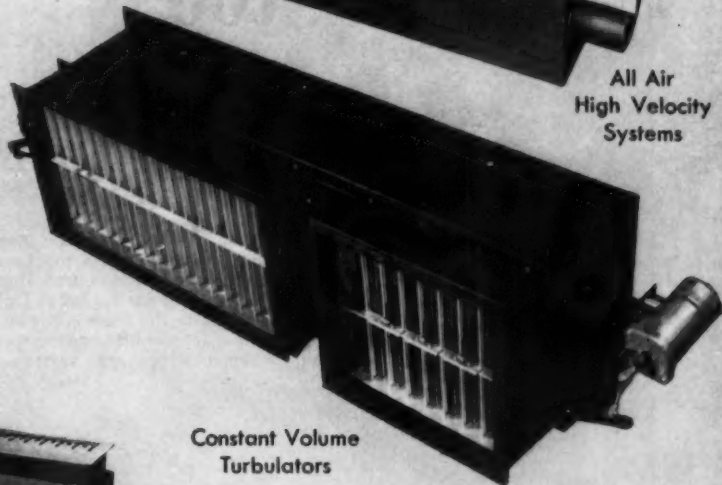
Conventional Air Diffusers



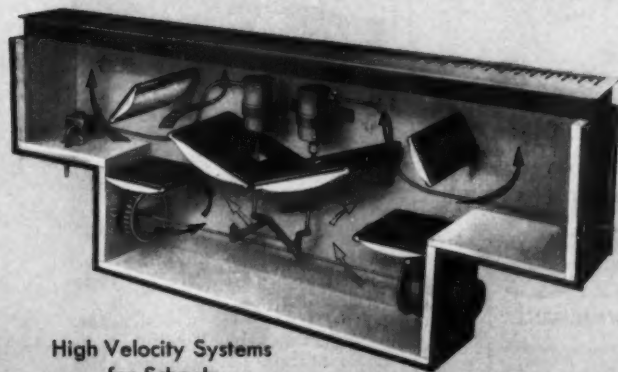
100% Induction Air Diffusers



All Air
High Velocity
Systems



Constant Volume
Turbulators



High Velocity Systems
for Schools

ANEMOSTAT®

ANEMOSTAT CORPORATION OF AMERICA

10 EAST 39th STREET, NEW YORK 16, N. Y.

Representatives in principal cities

"No Air Conditioning System Is Better Than Its Air Distribution"



of residential, commercial or automotive air-conditioners. Indicates in BTU's heat removed as well as the total air volume. Establishes the BTU per hour capacity of the unit under test in its installed operating con-

dition. Entirely self-contained, the unit measures $16\frac{1}{2} \times 9 \times 6\frac{1}{2}$ ", weighs approximately 6 lbs. Complete test takes only a few minutes.

Circle No. 157 on Reader Service Card

Air-Cooled Condenser

Product: Large, remote air-cooled condensing units in five sizes from 10 through 30 tons.

Manufacturer: Dunham-Bush, Inc., West Hartford, Conn.

Features: Designed for applications needing water savers. Although dual motor compressors are used in larger sizes, separate refrigeration circuits are furnished for



each motor-compressor. Electrical controls for dual motor compressor units are supplied with time delay step-start feature to minimize start up power needs. Ready for use once suction and liquid line connections are made and electrical supply is brought to control box.

Circle No. 158 on Reader Service Card

Pride of ownership

means
valves,
too!



You've probably heard or said many times that "a good cup of coffee can make a restaurant." Hubbell valves, too, have built their reputation on **honest quality**. Every step of production, from Hubbell's own castings to finished controls, reflects the highest degree of precision craftsmanship—**honest value** that makes possible the finest in line performance and long, trouble-free life. That's why refrigeration men everywhere have always pointed with pride to the Hubbell valves in their systems.

We, at Hubbell, have never and will never compromise honest quality for price.

E. B. LaPlante

E. B. LaPlante
GENERAL MANAGER



HUBBELL CORPORATION

MUNDELEIN, ILLINOIS
BACK PRESSURE REGULATOR VALVES • DUAL PRESSURE REGULATOR VALVES •
AUTOMATIC SUCTION STOP VALVES • SOLENOID VALVES • GAUGES •
SAFETY RELIEF VALVES

"Castings to finished controls... every inch HUBBELL!"

Circle No. 65 on Reader Service Card

Tool Compartments

Product: Truck tool compartments (Series TC).

Manufacturer: Utility Body Co., Oakland, Calif.

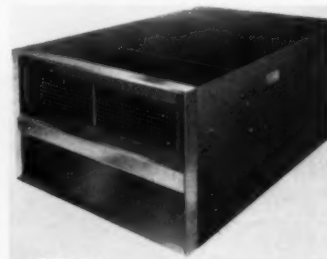


Features: Fabricated of heavy gauge steel, electrically welded. Available in pairs or individually. For universal mounting on any pickup or flat bed vehicle.

Circle No. 159 on Reader Service Card

Air Handling Unit

Product: Air-conditioning air handling units in 3, 5, 8, 10, and 15-ton capacities.



Manufacturer: Typhoon Air Conditioning Co., Div. of Hupp Corp., Brooklyn, N. Y.

Features: Improved "free-throw" plenum chamber. Simply installed heating coil accessory. May be suspended from ceiling or recessed into wall. Used with water-

cooled or waterless air-conditioning, or as parts of chilled water systems. Available with hot water or steam coils. Also may be used for heating. 24½" high. Filters are installed on rear of heating coils so that air is cleaned before entering coils.

Circle No. 160 on Reader Service Card

Hot Gas Cooler

Product: Series of low-temperature, hot gas defrost product coolers.

Manufacturer: Refrigeration Appliances, Inc., Chicago, Ill.

Features: Maintain low temperatures and higher temperatures up to 34 F with minimum variation in humidity, manufacturer says. Multiple-fan units have air capacity up to 10,725 cfm. Single-fan model capacity is 2490 cfm. Coil fins are spaced four to an inch for greater efficiency.

Circle No. 161 on Reader Service Card



Auto Air-conditioner

Product: Air-conditioner for automobiles.

Manufacturer: Eaton Mfg. Co., Cleveland, Ohio.



Features: Plastic front panel. Full-range control of air volume for easy choice of air flow in any desired amount. Thermostatic temperature control automatically maintains selected degree of cooling.

Circle No. 162 on Reader Service Card

Cooler-Freezer

Product: Walk-in cooler-freezer combination.

Manufacturer: Nor-Lake, Inc., Hudson, Wis.

Features: Designed for normal and low temperature operation. Interior divider with plug-in panel refrigeration for independently insulated temperature compartment.

Available in wood or metal construction. Defrost control valve simplifies servicing. Plug-in panels are self-contained refrigeration systems applicable in walk-in coolers and freezers. Can be mounted in ceiling or side. Available in standard sizes or custom built.

Circle No. 163 on Reader Service Card

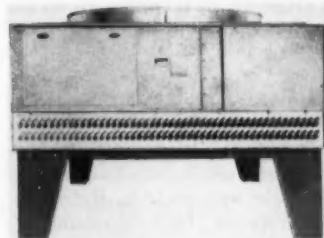
Air-Cooled Condenser

Product: Line of vertical flow air-cooled condensers.

Manufacturer: McQuay, Inc. of Minneapolis, Minn.

Features: In eight sizes from 7½ to 50 tons nominal capacity in single unit. No wind deflectors needed. Capacities are unlimited with multiple installation. Belt driven and remote. Designed for waterless refrigeration and air-conditioning.

Circle No. 164 on Reader Service Card



4,000—30,000 CFM COLD DIFFUSERS for high or low temperature — hot gas or water defrost

All refrigerants can be utilized—including ammonia and brines. Coil and drain connections can be made at the right or left independent of the blower section. Blowers can be adjusted to front, rear or top discharge on the site.

Capacities: 1240 to 26,700 BTU/hr. at 1° T.D.

Total surface area: 321 to 8360 square feet.

Fin spacing: 3 or 4 per inch.

Construction: heavy 12-gauge welded steel; hot-dipped galvanized blower wheels and scrolls; hot-dipped galvanized casings available.

Send today—for your copy of free bulletin and help on installation and refrigeration problems.



Manufacturers of freon, ammonia, flooded ammonia heat transfer equipment



REFRIGERATION APPLIANCES, Inc., 905 Lake St., Chicago 7, Illinois

Send free bulletin giving all technical details.

Name

Firm

Address

City Zone State



Circle No. 54 on Reader Service Card

UCON REFRIGERANTS GET FIRST CUSTOMER



A SHAKING OF HANDS marks the first shipment of "Ucon" refrigerants to a refrigeration and air-conditioning wholesaler. Left to right: Tom Hartley and John Fleck of the factory organization, and Rod O'Flaherty and Jim Downs of Refrigeration Supplies, Inc.

Union Carbide Chemicals Co. officially entered the refrigerants field recently by making its first shipment of Ucon refrigerants. The sale was made to Refrigeration Supplies, Inc., Cleveland.

The company, Div. of Union Carbide Corp., is using its sales force to call on refrigeration parts wholesalers. The force operates from 28 district offices in the country and will be helped by a staff of refrigeration specialists. A network of 47 warehouses also will be used.

Jim Downs heads Refrigeration Supplies which also has branch stores in Akron and Youngstown. The firm serves 19 counties in Ohio and six in Pennsylvania.

2 EASTERN FIRMS OFFER COMBINED SERVICES

Two firms have combined to offer a coordinated sales engineering, design, and contracting service. They are J. W. Greer Co., Wilmington, Mass., and Freezing Equipment Sales, Inc., York, Pa.

Greer makes continuous production machinery. Freezing Equipment Sales has specialized in industrial refrigeration with emphasis on development of low temperature freezing systems.

The joint move is expected to benefit the frozen food industry, confectioners, bakers, and other industrial processors.



FIRST SALE of Ucon refrigerant by the wholesaler is made by Gerald Downs (left) to Harold Folliott of Kay Refrigeration Co.

FOX GETS KEY POST

Lloyd G. Fox, manager of product sales, Wolverine Tube, Div. of Calumet & Hecla, Inc., has been elected vice-chairman, pipe and tube section, Copper and Brass Research Association.

JAS. P. MARSH SOLD TO COLORADO OIL & GAS

Jas. P. Marsh Corp., Skokie, Ill., and its subsidiaries have been bought by Colorado Oil & Gas Corp., Denver.

Colorado Oil's business is drilling, production, refining, and marketing of petroleum products. Jas. P. Marsh is a large manufacturer of indicating pressure gauges. It has branch factories in Houston, Tex., and Edmonton, Canada. It

also makes thermometers, heating specialties, and refrigeration controls and valves. Sales offices are maintained throughout the United States and in foreign countries.

Marsh will operate as in the past except for changes in the board of directors and executive officers. C. H. Olmsted, chairman of the board, and Barrett Scudder, president, have retired.

W. C. Norman, president of Colorado Oil, is the new chairman of the board. A. D. Rose, former executive vice president and general manager of Marsh, was elected president.

Other directors are: J. A. Thommes, vice president in charge of plant operations; Charles R. Kaufman, Chicago counsel for Marsh; J. S. Bowman, executive vice president of Colorado Oil; and C. W. McDermott, secretary of Colorado Oil, who assumes the same post with Marsh. J. W. Smith continues as vice president and treasurer.

New executive officers are R. E. Barnett, vice president for sales and Bernhard Willach, vice president for engineering.

CODE CHANGE AVAILABLE FROM STANDARDS ASSN.

A revision of the American Standard Safety Code for Mechanical Refrigeration (ASA B9.1-1958) is available at \$1 per copy from the American Standards Association, Dept. PR 30, 70 E. 45 St., New York 17, N. Y.

Changes concern technical details which keep the code abreast of technical developments in refrigeration. For the first time, occupancy classification for use of the code includes single family private residences.

Sponsored by American Society of Refrigerating Engineers, the code provides standards of safety which can be adopted readily by any group using mechanical refrigerating equipment or that's concerned with safety regulations.

FIELD FORCE EXPANDED

Cutler-Hammer has broadened its field marketing organization by increasing the number of district sales offices from 17 to 22 and establishing five regional sales districts.

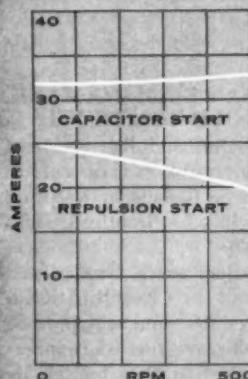
TOUGH STARTS MADE EASY...



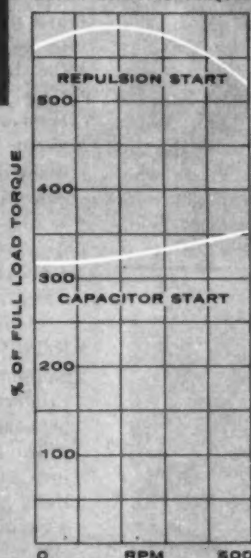
WAGNER REPULSION-START INDUCTION MOTORS

**GET MORE STARTING
TORQUE WITH THE
SAME HORSEPOWER**

MOTOR STARTING CURRENTS



MOTOR STARTING TORQUES



ONE HP, 1750 RPM, 60 CYCLES, 230 VOLTS

START HEAVY LOADS WITH EASE

STAND UP UNDER LONG SERVICE

USE EXTREMELY LOW STARTING CURRENT

Starting heavy loads is a natural for Wagner Type RA Motors. Widely used for high starting torque applications, like farm machinery, compressors, pumps and grinders, this rugged single phase motor requires very low starting current that minimizes light flicker. You get smooth performance with a constant high operating speed, even under overload, and a flat efficiency curve over a wide operating range.

You practically eliminate service problems when you power tough single phase applications with these motors. They have unmatched ability to start high inertia or heavy friction loads repeatedly and they give many years of unfailing service.

You can get these motors from leading motor distributors in your community or through Wagner Sales Offices in 32 principal cities. Your Wagner Sales Engineer will be glad to help you select the right motor for your application. Wagner Bulletin MU-220 gives full details on Repulsion-Start-Induction Motors.

WM59-8

Wagner Electric Corporation

6442 PLYMOUTH AVENUE, ST. LOUIS 14, MISSOURI

SERVING 2 GREAT GROWTH INDUSTRIES... ELECTRICAL... AUTOMOTIVE

REVCOR, INC., BUYS BRONSON FAN LINE

Revcor, Inc., has purchased the fan line of Bronson Fan Mfg. Corp.

The manufacturing operation of the Bronson line is being moved to Revcor's Carpentersville, Ill., plant.

This enables Revcor to give complete air impeller service to the air-conditioning, heating, and ventilating fields.

Revcor sales representation is being increased and territories now are available.

D-H NAMES SALES AGENT IN L.A. AND ARIZONA

Authorized Supply Corp. of Los Angeles, which for more than 18 years has sold Drayer-Hanson's refrigeration products on a non-exclusive basis, has been named exclusive sales agent for the manufacturer's commercial refrigeration products in the Los Angeles area and the state of Arizona.

The association marks a departure from typical D-H distribution practices. Authorized, basically a wholesaler operation, maintains other wholesale outlets in the area. For Drayer-Hanson, however, and one other non-competitive manufacturer, (Bell & Gossett), the firm will function solely as a sales agent, performing all services re-

quired by engineers, architects and contractors.

D-H products also will be available to other wholesalers in the area through Authorized Supply, it is stated.

Sales at Authorized will be directed by Paul Roberts, who will work in conjunction with Drayer's recently appointed refrigeration specialist, J. F. Chambers.

SPRINGPORT STEEL TRY'S MARKET SHELVING FIELD

Springport Steel Products Co. of Springport, Mich., has announced its entry into the adjustable metal market shelving field.

The firm's line of shelving is constructed of steel framework with hardboard flush backs. All sizes and widths are available in half gondolas, full gondolas, wall and liquor shelving. Inserts such as variety tables, slanting shelves, and pegboard backs also will be available. Display shelving will have a baked enamel finish available in eight standard colors.

In addition, shelving for back room or walk-in cooler use also will be offered.

The company is headed by Carl S. Greer, Jr., of Albion, Mich. Sales department is under the direction of Robert J. Frost, who has had six years of experience in the supermarket equipment field.

JOB-PLANNED TRUCKS

Continued from page 45

in the truck's efficiently arranged storage compartments. At today's labor rates, he points out, every minute saved this way is important.

In addition to the utility truck originally purchased by the company, Lehigh now rents a second truck of this type which is owned by one of the firm's servicemen. Together with the three panel and three pickup trucks operated by this contractor, this makes a fleet of eight vehicles.

The utility bodies have proved so satisfactory, however, that Hardner plans on gradually converting his fleet to this type of vehicle entirely. He feels that with only five utility trucks he will be able to handle the same volume of business for which eight trucks are now being used.

"An unexpected benefit of these utility bodies," Hardner reports, "is the favorable reaction they have attracted from both customers and prospects. Many people seem to be favorably impressed with the businesslike arrangement of tools and supplies in the truck's compartments. This gets us talked about, and is the kind of advertising we couldn't buy at any price."

CANADIAN FIRM TO MAKE, SELL KOLD-HOLD UNITS

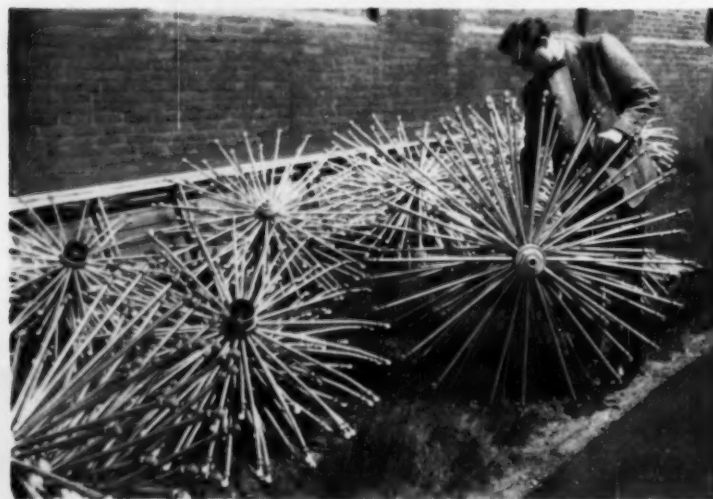
Manufacture and distribution of Kold-Hold truck refrigeration equipment in Canada by KeepRite Products Ltd. of Brantford, Ont., has started.

The equipment will be marketed in Canada as "KeepRite Kold-Hold" products, and will provide a comprehensive line of commercial refrigeration units for sale by the refrigeration, air-conditioning, and heating division of the Brantford firm.

BRANCH OFFICE OPENED

Air Conditioning Wholesalers, Inc., Niagara Falls, N. Y., has opened a branch office in Rochester, N. Y. Andrew E. Feiner is branch manager of this Carrier Corp. distributor.

WE HAD TO LOOK TWICE, TOO!



SPIDERY FIGURES actually are spray assemblies used in new industrial air-conditioning units by Carrier Corp. The sprays set up a small hurricane which cools and cleans air removing lint and other particles. The air then is delivered to manufacturing areas.

MASTERFREEZE APPOINTS ARMSTRONG CONTRACTING

Masterfreeze Corp., Sister Bay, Wis., announces the appointment of Armstrong Contracting & Supply Corp., a subsidiary of Armstrong Cork Co., Lancaster, Pa., as its exclusive sales representative.

Armstrong Contracting, an insulation contractor operating on a national scale, has sales offices in all major trading areas throughout the United States and Alaska. It provides full service on insulation projects for architects, engineers, and owners.

COLEMAN DIVIDES SALES FORCE INTO 3 GROUPS

Coleman Co., Inc., has divided its sales organization into three marketing divisions according to product classifications and type of distribution.

The three divisions and their respective general managers are Home Heating and Air-conditioning, Jess L. Moore Jr.; Cutting Products, A. O. Beyer; and Mobile Home Heating and Air-conditioning, R. H. Lowe.

MARVIN MITCHELL HEADS HEATING-COOLING GROUP

Marvin E. Mitchell has been elected president of the national Better Heating-Cooling Council. Mitchell is vice president in charge of sales, Weil-McLain Co., Michigan City, Ind.

Michael J. Murray was named a new member of the board of directors and as chairman of BHC's plans board, the post formerly held by Mitchell. Murray is division sales manager, John J. Nesbitt, Inc., Philadelphia.

Retiring BHC president John H. White, president of Taco Heaters, Inc., has been appointed chairman of the membership committee.

Re-elected as vice presidents were Gordon J. Andrew, president of the wholesale firm of W. T. Andrew Co., Detroit, and W. A. Burbine, manager, merchandising, heating products, Crane Co.

Franklin Greene, executive director, has been named secretary, and Robert E. Ferry, general manager of the Institute of Boiler and

Radiator Mfrs., treasurer.

In addition to Mitchell, Murray, White, Andrew and Burbine, the new board of directors includes Paul K. Addams, Fitzgibbons Boiler Co.; Carroll M. Baumgardner, National-U.S. Radiator Corp.; Virgil A. Good, Burnham Corp.; James H. Legg, Federal Boiler Co., Inc.; Milton Lundgren, Vulcan Radiator Co.; R. Edwin Moore, Bell & Gossett Co.; Daniel J. Quinn, American-Standard; John E. Reed, H. B. Smith Co., Inc.; and Alfred Whittell, Jr., Raypak Co., Inc.

PERFECTION SHOWS NEW LINES AT SALES MEETING

Several new product lines described as the "forward trend" for 1959 recently were presented by Perfection Industries, Div. of Hupp Corp. at a week long sales meeting. Conducted by Carl W. Millsom, vice president, sales and advertising, the meeting was attended by both domestic and export sales representatives. Unveiled at the meeting were new models of gas and oil furnaces, central air-conditioning systems, and gas oil space heaters.



Here's what you get today

IN THE "Serviceman" TESTING THERMOMETER

A lot of improvements have been made in this instrument that was so excellent from the start:—

- Bourdon tube is now permanently leak tight.
- Bulb clip (see photo) is placed to make reeling of tubing still easier.
- Spiral spring guard at bulb prevents crimping and injuring capillary tubing.
- "Recalibrator" screw out in the open on back of case. No need to remove crystal to get at "Recalibrator."
- Crystal is sparkling Plexiglas (Lucite). More stain-proof and scratch-proof. Retains its original beauty.
- Internal stop protects against excessive temperatures.

Today's "Serviceman" tests to 40 below. It is made in two models: Standard type (above) and DeLuxe 3-scale type (right) showing Refrigerant -12 and -22 pressures in two added color scales. We haven't been satisfied just to make it the best thing of its kind; we've made it even better.

See it at your jobber's

MARSH INSTRUMENT CO. SALES AFFILIATE OF JAS. P. MARSH CORPORATION Dept. P, Skokie, Ill.

MARSH

Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta
Houston Branch Plant, 1121 Redwell St., Sect. 15, Houston, Texas

Refrigeration Instruments

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES



DeLuxe with 2 pressure equivalent scales.



Interior showing more convenient reeling and accessible "Recalibrator."

DIRECT MAIL

Continued from page 53

"We are enthusiastic about this program, and our dealers agree that we are on the right track in selling the other benefits of air-conditioning," says Kennedy. "Of course, they always are more than happy to get their name in front of people in their communities at our expense."

"We plan to follow up each mailing by asking our dealers if they

have had any positive results. We expect to be amply repaid for our efforts over the spring and summer. We think this will prove to be a most effective means of obtaining prospects."

"Except for the first mailing when the manufacturers' booklet was included, the mailings consisted only of our letter. We feel there is enough impact in a concise letter," Kennedy explained, "and that to send along specification sheets or other literature is just a waste of time and money."

GEORGE SUDLOW HEADS MINERAL WOOL GROUP

George Sudlow, vice president of American Rock Wool Corp., Chicago, has been elected president of National Mineral Wool Association, New York, an organization of 24 manufacturers and national distributors of mineral wool home insulation. Sudlow succeeds Everett W. "Pat" Smith, vice president of Owens-Corning Fiberglass Corp., Toledo, Ohio.

New vice president of the association is M. M. Wilson, vice president of Baldwin-Hill Co., Trenton, N. J. Harold H. Whittemore, general sales manager of the Building Materials Div., Flintkote Co., New York, is treasurer.

AMERICAN INSTRUMENT HANDLES FRENCH LINE

American Instrument Co., Inc., has announced that it is sole U. S. distributor for diaphragm-type pumps and compressors made by Corblin Co. of Paris, France.

This equipment is available with pressures from 50 to 15,000 psi and capacities up to 60 scfm. It will handle all types of gases and liquids including those which are highly corrosive, highly toxic, or radioactive, the firm says.

HYDRONICS INDUSTRY FORMS FIFTH COUNCIL

Hydronic industry leaders of Long Island, N. Y., have organized the fifth local Better Heating-Cooling Council in the country. It's aim will be to promote their heating and air-conditioning interests throughout the Long Island area.

SALES MANAGER NAMED

David E. Washburn has been appointed sales manager of the Carrier Weathermaker Div. of United Clay & Supply Corp., Baltimore, Md.

FORMS NEW DEPARTMENT

Armstrong Cork Co. has formed a central market development and sales training department for its Insulation Div. and Building Products Div. The new department is headed by F. W. Huffman.

**presents**
THE NEW derco
TERMINAL SEAL

PART NO. T-300-B

**Seals terminal leaks
on sealed units instantly and
permanently right on the job**

CHECK THESE FEATURES

- Overall height short enough to allow terminal cover replacement
- Installed in just 3 minutes
- Bakelite body—not affected by temperature changes
- Each seal has its own electrical connector
- Cannot short out
- Each seal has a nylon insulator cap for added electrical protection
- High dielectric strength



U.S. PAT. NO. 2,451,701 & ADD. PAT. PEND.

DESIGNED FOR USE ON THE FOLLOWING UNITS
Coldspot, Copelametic, Crosley, Frigidaire, General Electric, Gibson, Kelvinator, Montgomery Ward, Norge, Servel, Tecumseh, York, etc.

SPECIAL NUT REMOVER

Included in each set of derco seals, AT NO EXTRA CHARGE, is a time and labor saving tool, specially designed by derco to facilitate the removal of frozen or rusted nuts from the terminal posts. This duo-purpose tool may also be used for tightening the terminal seal on the dome—A must for all servicemen.

Send for Illustrated Catalog Dept. B-2

**INC.**
1020 EAST 15th STREET, HIALEAH, FLORIDA.

Circle No. 57 on Reader Service Card

NEW DIVISION FORMED BY AMERICAN-STANDARD

Formation of an Industrial Div. by American-Standard has been announced. The new division was created by the consolidation of the American Blower, Kewanee Boiler, and Ross Heat Exchanger Div.

The new division will manufacture and market the same products made by the three separate divisions. Among these are air handling and air-conditioning equipment, commercial and industrial boilers, Fluid Drives, heat exchangers and surface condensers. Division factories are in San Leandro, Calif.; Columbus, Ohio; Dearborn, Mich.; Kewanee, Ill.; and Buffalo, N. Y.

President of Industrial Div. is John W. Brennan, formerly president of American Blower Div. He will maintain offices at division headquarters in Detroit. Other division executives include: Richard S. Reade, vice president, manufacturing; Elbert M. Palmer, vice president, customer relations.

Edwin W. Petersen, vice president, marketing; Richard L. Bernhard, vice president, engineering; Townsend Tinker, vice president, technical development; Wells A. Gardner, vice president, works manager; and Albert O'B. Andrews, vice president, controller. Also appointed were Donald L. Clithero, general sales manager; and Howard C. Rollert, director of industrial relations.

The field organization consists of 14 sales regions covering the United States and 168 sales outlets — including branch offices and agents. Regional managers and headquarters cities are: Harley W. McClure, Boston; Joseph A. McCain, New York; John A. Bishop, Dallas; Robert G. Schreiner, Cincinnati; George G. Waters, Pittsburgh; Graeme B. Supple, Detroit; John F. Tobin, Chicago; George M. Kendrick, Minneapolis; Carl Clegg, Kansas City, Mo.; Carl S. Becker, Denver; John V. Spainhower, San Francisco; Paul Wilcox, Los Angeles; Harold H. Hill, Washington; William J. McKinney, Atlanta.

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted," \$4.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢. Boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢. All classified advertising payable in advance.

LINES WANTED

WANTED, **ADDITIONAL LINES OF EQUIPMENT**—COILS—AIR-CONDITIONERS, REFRIGERATION EQUIPMENT, GRILLS, COMPRESSORS, CONDENSERS, ETC. AS MANUFACTURERS REPRESENTATIVE IN WESTERN MICHIGAN. NOW HAVE UNIT HEATERS, GAS CONVERSION BURNERS, SMALL BOILERS. TWO REPRESENTATIVES, BOTH MEN WITH YEARS EXPERIENCE IN AIR-CONDITIONING AND REFRIGERATION WITH MAJOR MANUFACTURER. WILMOT'S, 1067 BRIDGE ST., N.W., GRAND RAPIDS 4, MICH.

RECORD COPYRIGHTS NEW WORD "DRICON"

The word "Dricon" has been copyrighted by Recold Corp.

The copyright refers to "Dricon" air-cooled condensers.



**PROVEN
BEST!**

**FOR ALL
MAKES
OF ICE
MACHINES**

VAPCO

ICE MACHINE CLEANER

The ORIGINAL LIQUID Ice Machine Cleaner. Works fast yet safely. Produces FRESH SMELLING flakes and cubes.

No danger from toxic residues because it's FOOD GRADE. Simple and safe to use with ANY machine.

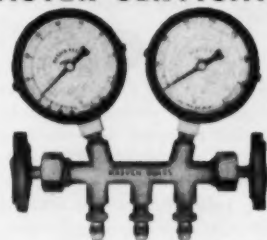
1. Goes into solution quickly — even in COLD water.
 2. No undissolved crystals left.
 3. Removes more scale per ounce of cleaner.
 4. Easy to use.
- 8 fl. oz. bottles and 200 lb. Drums

GUARANTEED
Vapco
PRODUCTS
Complete literature on request or see your dealer TODAY!
GARMAN COMPANY
ST. LOUIS 23, MO.

Circle No. 60 on Reader Service Card

Circle No. 58 on Reader Service Card

NEW ...FOR EASIER FASTER SERVICING



Pat. Pending

Designed for convenient charging, purging, testing etc., this new compact unit features an all brass forged body, easy-grip hand wheels, Teflon packing and seat for positive shut-off. Equipped with dual scale 2½ inch pressure and compound gauges. Hose connections ¼ inch male flare, gauge connections ¼ inch female pipe thread.



HANDY HOSE HOLDER

Attaches to back of testing unit so free end of hoses can be conveniently coupled when not in use. Keeps them dry and free from dirt.

SEE YOUR **MADDEN WHOLESALE**



MADDEN BRASS PRODUCTS COMPANY
AURORA 2, ILLINOIS, U.S.A.

EXPORT: Ad Avenue 85 Broad St. New York, N. Y.



You can do a bigger and better selling job with Coldin Cases . . . the largest and most diversified line of quality Commercial Refrigerators in America. Get all the extra advantages that only the leader can offer. Call, write or wire for details and catalog today.

COLDIN
CABINET CO., Inc.
2800 Webster Ave., N. Y. 58, N. Y.

Circle No. 59 on Reader Service Card

STOP

Losing money during your
slow season-

LOOK

At how easy it is to keep your mechanics profitably employed all year repairing hermetic compressors with a FRANKELL HERMETIC COMPRESSOR OPENER. Keep your shelves filled with rebuilt units so that during the busy season you can do more jobs in less time at a greater profit. A FRANKELL HERMETIC COMPRESSOR OPENER opens any hermetic compressor up to 20" in diameter. No special jigs or skill required.

LISTEN

To the ring of profits the year 'round. Remember, when you repair hermetic compressors, the profits are big. So ACT NOW! Only \$695 Ex Factory. Ask about our rental plan. Export facilities.

FRANKELL MFG. CO., INC.

1074 Home Street, New York 59, N. Y.

WRITE DEPT. 5 for complete information.

BLAST

**SCALE . . . SLIME . . .
SLUDGE . . . ALGAE . . .**
but **SAVE the EQUIPMENT!**

For Easier Work . . . More Satisfied
Customers . . . DEMAND . . .

VAPCO SCALE REMOVER

The SAFE cleaner in powder form!

VAPCO-HIB

For those who "Make Their Own" cleaner!

VAPCO-PHOS NUGGETS

To keep cleaned jobs really clean!

VAPCO SLIME-X

To knock out algae and slime!

VAPCO Ice Machine Cleaner

Safe for all makes and models!

Complete literature on request
or see your dealer — TODAY!



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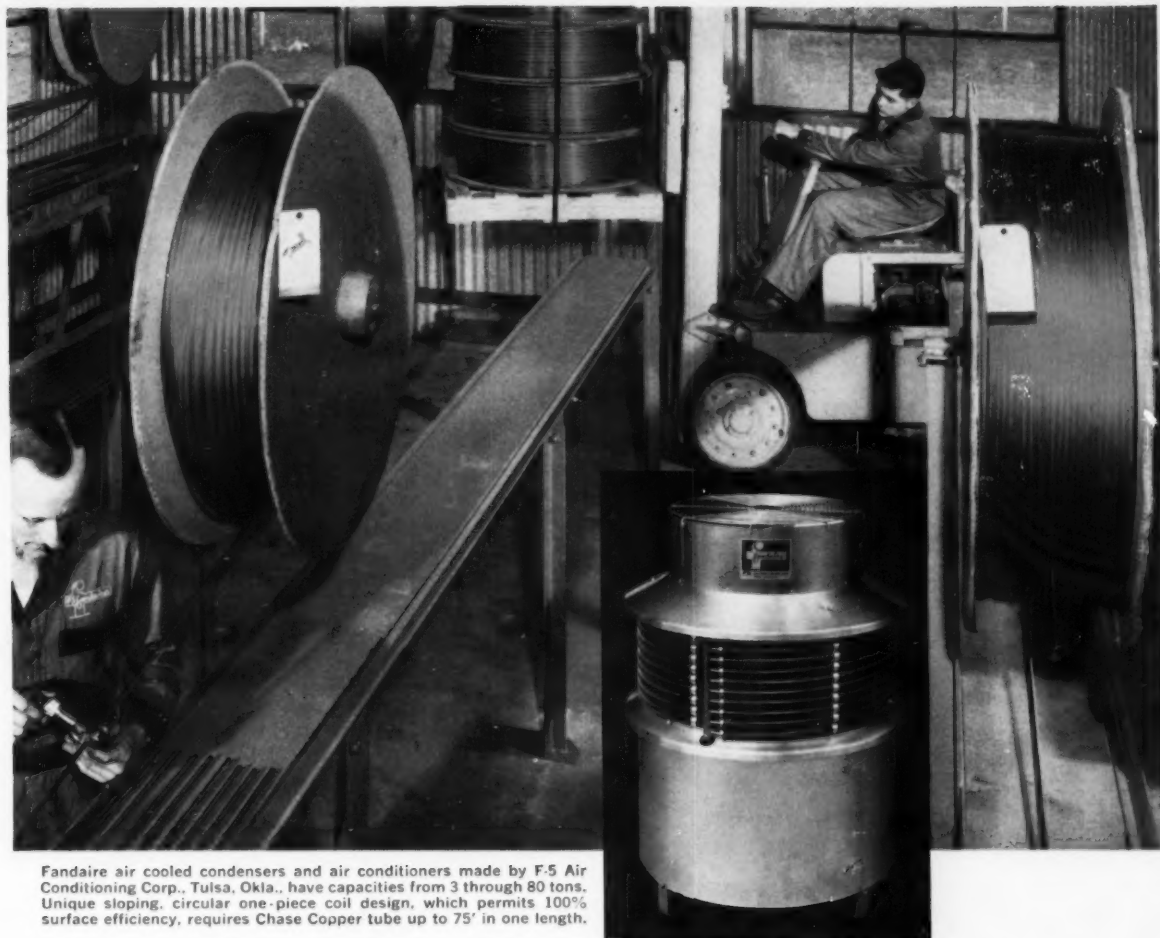
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Fandaire air cooled condensers and air conditioners made by F-5 Air Conditioning Corp., Tulsa, Okla., have capacities from 3 through 80 tons. Unique sloping, circular one-piece coil design, which permits 100% surface efficiency, requires Chase Copper tube up to 75' in one length.

New Chase throw-away reel makes six-way saving

Air conditioning manufacturer reports results using $\frac{3}{8}$ " and $\frac{5}{8}$ " tube shipped on disposable units

Since Chase introduced its new, convenient disposable reel for shipping small size refrigeration tube, savings have been reported by manufacturers all across the country. Here's a typical story:

1. Scrap losses cut from over 2% to less than $\frac{1}{2}$ of 1%!
2. Easier inspection of tube on receipt.
3. High-speed reeling-off of long lengths without any chance of kinking or fouling.
4. Tube is much straighter, reducing and making easier the straightening operation required before use.
5. One-man machine loading of up to 1700' of tube without any chance of damage or distention of the tube coil.

6. Reduction of storage and handling problems since it requires less space.

Ask your nearest Chase Representative about extra long lengths of copper refrigeration tube packed on the new disposable reel that simplifies storage and ends reel return problems, protects tube quality and gives you appreciable production-line savings. Or write Chase at Waterbury 20, Connecticut.

Chase

BRASS & COPPER CO.

WATERBURY 20, CONN.

Subsidiary of

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Circle No. 2 on Reader Service Card



...could happen to any man

Jones suffered a heart attack. It happens to hundreds of thousands of Americans each year. Heart attack, or coronary artery disease, is our nation's leading single cause of death, accounting for 250,000 fatalities annually.

But because of new advances in diagnosis and treatment, *most victims of heart attack recover* to lead useful and productive lives.

Jones recovered and is back at his desk today, thanks to new medical knowledge developed through heart research.

Your Heart Association, through *your* support of the Heart Fund, has allocated more than \$32 million during the past ten years to research on heart and circulatory diseases. A large portion is being spent to discover the underlying causes of atherosclerosis, a form of hardening of the arteries, which is responsible for heart attack.

When you give to the Heart Fund, you are joining forces with medical science to carry forward intensive research on all forms of heart and blood vessel disease. Thus, you are making the best investment you can to safeguard *your* heart and the heart of *each member of your family*.



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